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UNIVERSITY OF ALBERTA

AN EXPLORATION OF WOMEN'S INDIGENOUS KNOWLEDGE PERTAINING TO AND USE OF FOOD: A CASE STUDY OF NYANDARWA DISTRICT: KENYA

By

Nyambura Susan Maina ©

A Thesis presented to the Faculty of Graduate studies and Research in partial fulfilment of the requirements for the degree of

MASTER OF EDUCATION

IN

INTERNATIONAL/INTERCULTURAL EDUCATION

DEPARTMENT OF EDUCATIONAL FOUNDATIONS

EDMONTON, ALBERTA

SPRING, 1994

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommended to the Faculty of Graduate studies and Research for acceptance, a thesis entitled "An Exploration of Women's Indigenous Knowledge Pertaining to and use of Food: A case study of Nyandarwa district Kenya" submitted by Nyambura S. Maina in partial fulfilment of the requirements for the degree of masters in Education in International and Intercultural Studies.

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ISBN 0-612-11280-2

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TITLE OF THESIS: An exploration of Women's Indigenous Knowledge Pertaining to and and use of Food.

DEGREE: Master of Education

YEAR THIS DEGREE GRANTED: 1994

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Dedicated to my son Maina

and

my sister Muitheri

Acknowledgements

Words are inadequate to convey the sense of gratitude and indebtedness I feel towards the members of my committee.

Thanks to Dhara Gill who taught me to appreciate, and deepened my interest in rural societies, for his unfailing support and his expertise;

Thanks to Eloise Murray, my Canadian *maitu,* my mentor, colleague and friend. She not only inspired me with her font of ideas and motivated me to work, but also provided me with many opportunities to pursue my interests . Thank you for teaching me without letting me know/feel that am being taught; by example.

The Kenyatta University/University of Alberta Link through Prof. Eloise Murray for providing the financial support .

I.D.R.C. for providing additional funding for my fieldwork.

Thanks to the women of Nyandarwa, *daughters of Mumbi; a cucu, maitu na airu.* For letting me into their circle and transempowering me.

Thanks to my parents Julius Maina and Agnes Njeri; my sisters Muitheri and Wanjiku, my brother Kaniaru and my brother-in-law, Gatahi ; for their 'remote controlled' love, support and patience.

Thanks to my son Maina, for his love, support, letters and patience through a seemingly endless study leave and thanks to my niece Ngonyo/*the woman* for the most interesting and lovely letters.

Thanks to my fellow students: Brian Stelk for patiently going through my drafts and giving me invaluable feedback. To my brother Gethi who taught me to 'excel' my figures and to fight my fear of mice/the mouse; Eunice/*daughter of Mumbi* for going through my themes; Mbangi for his unfailing support and for letting me use his printer.

Thanks to my roommate Edith for her moral support and enthusiastic encouragement when the going got tough.

My peers/support group; Yoke sum Wong, for transempowering me through her ideas and for always having a paper that I just needed to read; Samira for her quiet strength and moral support; William for his unfailing support; Bantu, Fan and Hesoon for their friendship.

Last but not least the International student fellowship at Ellerslie Road Baptist Church and especially Brian and Doris Fargher for their unfailing support, prayers and phone calls .

Abstract

The role of women as mediators of family nutrition and health has been well documented. The issues explored in this study is how three generations of Kikuyu women from Nyandarwa district categorise, describe and use food. Related issues are technical/scientific definitions, the cultural knowledge, social cultural situations, and the influences of culture and social change upon their decisions about food. Further, the decision making criteria women use in selecting food to use and how the local/indigenous knowledge can contribute to education and health is examined. The conclusion deals with possible ways of applying that knowledge to reflect changes needed in nutrition education programs. An ethnographic approach was used. A taxonomic analysis, componential analysis, and cultural themes are used to present the knowledge of/about food and its relation to health. A decision tree model illustrates knowledge about knowledge/adaptive knowledge women use to make decision about foods use. The region of residence, age group, and socio-economic status were found to influence kinds of foods chosen. Components of the Social Learning Theory are used to reflect on changes needed in nutrition education programs: to promote healthy diets, lifestyles and a sustainable regional diet. Empowerment of women is seen as crucial, to both planning of the programs and to sustainable behaviour change.

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Abbreviations

DTM	Decision Tree Model
EDTM	Ethnographic decision Tree Model
FAO	Food and Agriculture Organisation
HAM	Health Action Model
HBM	Health Belief Model
I.D.R.C	International Development research Council
IFFP	Indigenous Food Plant Program
Ifps	Indigenous Food Plants
S.L.T	Social Learning Theory
SAPS	Structural Adjustment programs
USAID	United States Agency for International Development
WHO	World health Organisation

CHAPTER ONE

Introduction

The primary purpose of this study is to determine the nature of women's knowledge and decisions about foods, particularly those foods which are indigenous to Kenya. Further, information was sought about the knowledge used and decisions made concerning families' use of foods and whether or not they provide needed nutritional elements. In the final chapter, the study explores ways of incorporating this knowledge into nutrition education curriculum and programs.

This is an exploratory study that examines the ways three generations of women categorise and use food. The objectives of the study are to:

i. determine how the women categorise, describe and use food. Do their constructs about food and its role in health resemble the technical/scientific definition?

ii. explore the cultural knowledge of food, cultural behaviour, and social situations in which the women live, and to a lesser extent, the influences of culture and social change upon their decisions about food.

iii. explicate the decision making criteria women use in selecting food to use and examine how local knowledge can contribute to nutrition and health education by examining food as a variable in cross cultural health.

iv. apply the knowledge generated in the study to reflect on changes needed in nutrition education programs.

The nature of the study

The nature of the study is cognitivist. It looks at meanings and knowledge attached to the actions of the women (Werner, 1988; Spradley, 1980). It is an attempt to deconstruct the views that are reflected in many nutrition programs, that rural African women are ignorant about nutrition and its health consequences and that all local knowledge systems are a priori inoperative antithesis of modern/western/scientific knowledge. Rather food is seen to be a daily concern for rural women and something about which they know a great deal. All women are involved actively in the food systems. The accumulated skills and knowledge through interaction with their environment (Altieri, 1990) indicate their actions and behaviour and is not practice without theory (Titilola & Mazur, 1992). This knowledge system addresses the **what** of foods, processing techniques and activities and the **why** or principles, positions, epistimeologies and relationships among various domains (Thrupp, 1989) and even the **when** and **how** issues. The limits set by foods that would be not observable through phenomena are nutrient composition and toxins, but the results of consuming or not consuming certain foods are.

This knowledge is contained in the heads of the women. Locality is the key distinguishing feature of this knowledge. The reconstruction process of this study brought the women of Nyandarwa, their experience, and skills in mediating family nutrition back into the picture. The recovery and documenting of local knowledge formed a major component of the reconstruction. There is a compulsion too to recognize social differences among the women by segmenting/segregating the 'audience'. The issue is not to choose scientific or local knowledge, but to create conditions in which these separate realities can inform each other (Kloppenburg, 1991). Consequently, one can develop political and social means to direct the reconstruction by creating an alternative vision.

The study was cross sectional. It dealt with a specific group in Kenya, the Kikuyu women of Nyandarwa District, to obtain baseline data and explore a social system. Ethnoscience aims to define the meanings of things, in this case foods, in the context of their use (Werner, 1988, p.26). The definition/description of foods in the context of their use provides the basis of the knowledge behind the women's actions and behaviour. The focus was on women as the mediators of family nutrition for there has been little or no focus on the mediators of family nutrition per se from the emic or insiders native point of view (Murray and Maina, 1993). The emphasis on three generations of women ensured no social category of women was excluded. There was a deliberate intent to accommodate all the social differences among the women, for women are clearly not a homogenous group.

An attempt was made to introduce the life course perspective (Kertzer, 1991), a move towards understanding 'subtle formulations of how peoples' lives are lived and how the course of their lives vary as a result of macro level developments' such as urbanization and policies was included (p. 19). Social stimuli such as education, colonialism and migration as macro forces have affected these women's lives and changed the ways in which those lives are actually being lived. The life course perspective also provides a basis for understanding human courses of development. Using this perspective, one area of investigation was the change of food use over the years due to the change of residence to Nyandarwa from other districts. By including older women in this study, seldom done particularly in developing countries, it may be possible to recover lost practices and knowledge that will improve household nutrition (Murray and Maina, 1993). Different people have alternate ways of acquiring and using information due to social change at different stages in their lives.

Most persons concerned with women and development have focused their attention and resources primarily on immediate income needs for adult women (Moser, 1989; World Bank, 1989). Far less attention has been directed toward the future generations of women. Activities surrounding food consumption include some of the most important daily tasks in which an individual or group of people engage over the life time. The effects of socialization experiences of young women and their preparation for future social roles have been largely neglected. Cultural and social situations are places where human beings recurrently interact in particular ways and where people learn certain kinds of knowledge, ways of doing things (Werner, 1988) and perceptions that belong to that place. All humans are multi-cultural. So are the women of Nyandarwa. They belong to several groups at any moment in time and perform various roles within those groups. They are in the women's group culture, motherhood, wife, age group, business women, and food producers among others. How does food production and consumption interact with these roles?

Most of the female population in Kenya are below 20 (Demographic and Health Survey, 1989) and many of them will not have access to land to grow food for their families in future (Smock, 1981). When land was plentiful, girls could be confident that their future husbands would provide them with enough land on which to grow food crops. How is the nature of this change reflected in different generations of women? How does it affect their roles as mediators of family nutrition? Do inter-generational perception/effects on diet and skills differ? Emphasis has to be laid where it matters. Eating habits have a dynamic relationship with the times in which they develop. They also influence food habits of later times long after reasons for their prototypes have been forgotten. Fewer studies have been made of food as a cultural process, than as a chemical process of life (Food and Agricultural Organisation, 1987), hence the focus on social and cultural aspects of food in this study.

Setting

The setting was in Nyandarwa district, of the Central Province of Kenya. Nyandarwa district is a high potential agriculture district with most areas, except the north eastern part of Ndaragwa division, receiving over 800 mm of rainfall yearly. The district falls under ecological zones II or III. Most of the district is above the 2000m contour. This being a humid area, with the exception of the Eastern part of Ndaragwa, agricultural production is extremely high. Crops grown include English potato, maize, wheat (in some parts), green peas, broad beans. Vegetables include cabbage, kales, carrots, onions, spinach and a few species of traditional vegetables. Fruits are less represented and these include pears, plums, apples, and more recently oranges and tomato tree. Besides food crops, the district raises dairy 'grade' cattle, merino sheep and goats in the semi-arid areas. Chicken rearing is also widespread. Cash crops are mainly pyrethrum and to a lesser extent, wheat on large land holdings. In recent years, due to the drought in most parts of the country, potatoes and other horticultural crops serve as the cash crops. In most cases in the main harvest season, there is overproduction of potatoes, peas and cabbages in the upper zone, leading to great losses. The poor roads and consequent inaccessibility contribute to this. With the exception of Ndaragwa division, the District is said/believed to be self sustaining in food production. The lower zone received food aid for the first time last year. A close look at this and other rural areas shows that the most food secure families are those that have retained indigenous food production and practice mixed farming.

As illustrated above, the crops grown are mainly exotic, not traditional because the district was part of the white highlands. Most residents are post independent settlers who migrated from other parts of Kenya, mainly from other districts of Central province, but from elsewhere too. It is a culturally and ecologically diverse district. These effects of transmigration and secondary neighbourhood are ignored in previous research (IFPP, 1992). The focus in literature and documents is erroneously on all the residents of the districts as Kikuyu, which overlooks the diversity of the region.

The community is market oriented. Due to ecological limitations, farmers grow exotic crops and due to relatively large sizes of plots can grow surplus for sale. These can also be as a result of extensive agriculture extension services that promote these crops. All the families practice mixed farming, and raise sheep, cows and goats in the lower zone. All families keep a few head of chicken. With the exception of Eastern Ndaragwa, as previously noted, agricultural production is high and therefore little attention is paid to indigenous and traditional crops. Besides, the land was under European cultivation for decades, and much of the original vegetation had been cleared for various purposes. In any case, the ecological conditions do not allow them to grow traditional tubers and most legumes, so community members do not have the option of choosing between traditional or introduced food crops. Most Extension Officers in the District claimed there are no indigenous crops!. But whether indigenous or exotic, the women had to cope with a new food environment when they settled in the area.

Available data on the District gives the following statistics for 1989:

Table 1 data about Nyandarwa District

% National Population	2
Child mortality per 1000	85
Fertility	8.5
Average Income per month	Kshs 1378
% Adult Literacy Total	62
% Adult literacy Males	89
% Adult literacy Female	53
Average Holding acres	20
% Improved Lighting	48
% < 2km away from natural source of water	94
% No sanitation	2
% < 2km away from Health Centre	22
% < 2 Km away from primary school	72
% < 2 Km away from Adult Education	86
% < 2Km away from market	33
% < 2 Km away from Bus stop	78

Table 1: Source: UNRISD, 1989

The district has grown in population since 1964, when it was first settled. The fertility rate (8.5) is the highest for Kenya. The statistics show relatively high literacy rates for the women, but from the sample data, it is the younger women and the women from the upper zone who raise the figure. The figures for income per month are the second highest in the country for small holders. This income is derived from milk production and pyrethrum sales, as well as farm gate sales of horticultural produce. Mixed farming has avoided narrow dependence on one item and residents produce most of the food they consume.

The 'one family, two households ' (Abbot, 1988) phenomena is prevalent, leaving women as the *arugamiriri* or de facto heads of households and farms. Men visit during week-ends and school holidays or at the beginning of the year to design the farm activities. Older children who go to school may live with the fathers away from the home. Most of the younger women are full-time farmers and 'weekend/month end wives'. Consequently, Nyandarwa has been a district of women, very busy women. Only recently, have some retired civil servants and *ene migunda/indo* or 'owners' of the land 'returned' home from towns. The other category of land owners are senior civil servants who own large tracts of land, and are content to ' have and to possess, but not to farm as such'. Together with their unemployed adult sons, these retired owners of land, have increased the male population in the district considerably, but clearly women have made significant impact on and contributions to major activities in the district for close to three decades. The high literacy rates of the women have contributed considerably to the performance of their children in schools for example. The District has topped the national list for Kenya Primary Certificate of Education (KCPE) for the last five years (Kenya government, 1993).

The District also happens to be the researchers home district. The researcher chose to encounter the it 'whole', within that context. Familiarity with the area allowed the researcher to shed the researcher interpreter dichotomy in order to exchange actively at the interface of knowledge systems (Werner, 1988 p. 158). 'We can only understand something/someone for whom we care. One learns to know what one loves, and the deeper, the fuller knowledge is to be, the more powerful and vivid must be the love, indeed the passion. For the Kikuyu assert **'Wega umaga na *mucii*'** which translates as 'Charity begins at home.'

An understanding of the diet of an individual group or people is important for at least two reasons. One, nutrition science is well known and respected (Harper, 1987) and the second less evident case is that food consumption is intertwined with rituals and customs of everyday living. The activities surrounding food consumption include some of the most important daily tasks in which an individual or group engages (FAO, 1987). Food is not only a basic requirement of life, it is also used as an expression of socio-cultural values (Fallon & Rozin, 1983.; Sanjur, 1982). Sociocultural values influence how family capital and labour, important forces in family and societal wellbeing in any culture are used in food preparation and consumption.

There has been a lot of emphasis on food production, as opposed to consumption, in extension services (Altieri, 1991; Rajasekaran, 1993;). Murray (1985) noted that food plants and animals receive more care than human beings. It is not only the production techniques of food that are important, utility too is important for production of a product. A very important link to the production and use of food is missing and underemphasized. That link is the knowledge system; it is what makes a practice sustainable, dynamic and adaptable to a new situation.

Like all sciences, rural women's knowledge derives and recreates meaning from a larger and historical milieu. Technology is more than equipment and limited equipment should in no sense imply restricted knowledge (Ellen, 1993). Knowledge is the backbone of culture and the basis of education and policy initiatives (Maina & Murray, 1993). If this is undermined, everything else falls apart.

CHAPTER TWO

Theoretical Bases of the Study

What people eat, when, how and how much is influenced by social, economic, political and cultural processes. Each human being has certain nutritional requirements that are met by the same nutrients required by other people. Yet the foods that supply these nutrients are as different as the environments in which people live and the cultures through which they have adapted to them.

Food has different symbolic meanings to individuals within each cultural system. Politics, economics and culture enter the food experience shaping, emphasizing and even influencing which factors become significant for defining experience. Within a culture, although food commodity variables may be similar, all food habits are not necessarily homogenous. Differences in terms of processing and use as they relate to social status, occupation, sex, stage in life cycle, religious beliefs and personal experiences influence food habits intimately (FAO, 1987). Influence on food selection may be direct or indirect, and pervades all areas of living.

Food in Kenya has almost entirely overflowed the banks of subsistence to become a principal marker of status and style, and a richly symbolic method of projecting an image to others and reinforcing as well as developing self image. Continuation of Kikuyu ethnic patterns in food preparation and hospitality in towns takes two forms. These are preservation of kinship, in group activities favouring preservation of a common heritage, and hospitality to outsiders, when food is offered as an extension of personality.

Beyond factors of food consumption, people structure consumption in terms of dietary patterns. These are constructed by encoding foods according to their proper place in the diet (Messer, 1990). What constitutes a meal is defined in every culture and this determines food consumed at different times of the day. The number, timing, structure and contents of a meal may be reactively fixed or may vary throughout the year according to seasonal resources and activities (Messer, 1990; Douglas, 1972).

Durkheim (1966) observes that given the same environment, each individual adapts according to personal disposition, in a personal way, which is preferred to all other ways. One may prefer to change it, make it conform to needs, another may seek to change and moderate desires. However, when one comes in contact with a social phenomena such as food habits, one is surprised by astonishing regularity with which they occur under the same circumstances.

Traditionally in Kenya, as in other parts of the world, family food consumption was differentiated along lines of age and gender. Food reflected and symbolised social relations as well as social status. It also carried its own special values. Today's consumption patterns are determined by supplies available to the locality and the resources of individual households. Household or domestic economics is one of the less visible areas of society. The assumptions that households are supportive, or even neutral systems, has been challenged by research focusing in intra household dynamics (IFPRI, 1992). It is not uncommon for members within households to compete for resources, including food. Material factors play a large part in food selection. Where people rely on the market or are directly influenced by macro economic forces, economic factors are or may be foremost in food choices. Even with adequate nutrition knowledge, people do not have the economic means to feed themselves optimally (Maina & Murray, 1993). This predicament can be illustrated in several ways (Messer, 1990; Calloway and Gibbs, 1976), but there is need to pay attention to economic factors in food intake.

Data on importance of the meaning of food and impact of food habits on nutrient intake are usually collected by a combination of participant observation and selective interviews (Messer, 1990, Sanjur, 1982, Chapman & Maclean, 1993). Such an analysis of food within or as a culture may be compared across cultures to illustrate contrasting attitudes toward food, culinary practices and nutritional well being. Messer (1990) states the best natural setting to study such dietary decision making would be those in which new foods are being introduced. Thus my choice of Nyandarwa District of Kenya.

Social Relations and Food as Power

Food is a central part of many family occasions and is important to the biological as well as social reproduction of the family in both nuclear and extended families. Food practices help maintain and reinforce a coherent ideology of the family throughout the social structure. In Kenya, meals can be seen as symbolising important social relations of power and subordination that exist within the family. They function to maintain and reproduce a specific aspect of social order, the family, as well as the age and gender divisions that characterize it (Maina & Murray, 1993).

Food is important to family ideology and in terms of this ideology, an important aspect of the women's role within the family is to provide proper family meals for men and children (Charles and Kerr, 1988). It is part of Kenyan family ideology that a woman's place is in the home, while a man's task is to earn money to feed and sustain his family. The power enjoyed by men results from, or is at least reinforced, by their participation in paid employment outside of the home. Women working in the traditional sphere or giving up paid work outside the home, relinquish the power and status it may confer upon them and the power differential between the sexes is increased.

Having responsibility for day-to-day decisions about what food to produce, purchase or how much food to buy does not mean that women enjoy power or that they control the food their families eat. They exercise this limited power in other people's interest, above all in the interests of their partners. Women cook to please men and they decide what to buy in light of men's preferences (Charles & Kerr, 1988; Maina & Murray, 1993). They have the burden of shopping, cooking and producing meals regardless of the other responsibilities they may have. A woman cooks a more complete meal if the husband is at home; otherwise she may resort to snack foods from which the children can choose. Some women are known to say less money, (and time and energy, I guess) is spent on food when the men are away because they eat less formally. The main meal is a means of socializing the children about the authority of the father in the household. Their eating habits have to conform to what is appropriate to him as head of household. In his absence, rules may be relaxed and food conforms to children's preferences. When the husband is eating at home, it is also necessary for a wife to have prepared a meal for it to be considered acceptable, even if household help is available. Meal preparation represents and reinforces the division of labour; in particular it reinforces power relations within the family. The dominance of the male is recreated daily. A woman's own choices are subordinated, first by her partner then by her children (Maina & Murray, 1993).

The family meal tasks a woman has are carried within a set of social relations that deny her power, particularly when she is dependent on a man for financial support. Men decide the amount of money available for food expenditure and women have to work within that amount of money.

Women in Kenya have an emotional involvement in food. The implications for family eating are reflected in the way men's preferences are prioritised and women's own preferences neglected. "It doesn't matter to me, I can eat anything", may be a woman's response. Food plays an important role in maintaining relationships, in expressing affection, and in ensuring that men remain happy and content with their wives. Women are pleased to prepare food that is enjoyed. In most societies, women have had the responsibility to prepare food and give it to others. This central role of women in food preparation is not only universal; it is a major component of female identity and an important source of female connections to and influence over others. Although there are other sources of their authority, the power of women is the power of food. This is power through influence. It accrues not through force or ability to deny, but through giving and the obligations created in that process. With their limited resources and diminishing control over food, this power and source of identity is disappearing for women in many countries. Often this loss results from conditions in the larger society, such as the economic implications of structural adjustment programs to pay long term debt. As McFadden (1993) notes about Africa:

> The terms of structural adjustment programs have meant the loss of many, if not all, of the most basic services which women, especially poor women, have been dependent upon for the past 30 years of independence. This has resulted in an

> increase in the burden of reproduction which women have to bear. It is also a clear expression of the increased repression which has further marginalised women from the political process. On the entire continent women have had no say in the acceptance and/or implementation of the SAPs, yet they have been most affected by these policies. Ghana and Kenya re excellent examples of "successful" structural adjustment programmes which have succeeded in pushing the burden of social reproduction even more heavily onto women (p. 73).

Silvarankrishnan (1993) notes that in the domain of nutrition, there is extensive literature which indicates maternal education is positively related to child health and nutritional status of the family, but the effect of education on acquisition of knowledge is still not clearly documented (Silvarankrishnan, 1993; P.938). Besides, in the Kenyan case, only a few disciplines include nutrition concepts, and they are not ones that place emphasis on food utilization in the home. Others using qualitative data analysis suggest formal education may not have much effect on nutrition (Patel, Eisemon, & Arocha, 1988; Eisemon, & Patel, 1989). An issue of concern in recent years has been the nature of knowledge an individual acquires informally through cultural means (Silvarankrishnan, 1993), and the nature of the knowledge acquisition process which takes us to indigenous knowledge systems (IKS).

Indigenous Knowledge

Indigenous knowledge (IK) is viewed as a population's way of relating to the social and/ or physical environments that emerge in specific local contexts (Obrien, 1990; Butler 1989). Warren (1987) views IK as local knowledge that is unique to a given culture or society while Rajasekaran (1993) explains IK is the 'systematic body of knowledge acquired by local people through accumulation of experiences, informal experiments, and intimate understanding of the environment in a given culture'. Localized modifications of imported, institutionalized knowledge can be included as indigenous knowledge (Chambers, 1983). It is not necessarily traditional, but a merger of the old and new. This is what Haverkort (1991) views as the actual knowledge of a given population that reflects experiences based on traditions and includes more recent experiences with modern technologies.

IK is dynamic, changes through innovativeness and through other stimuli such as migration, segregation from one's ethnic group, and in interaction with others as is the case of the women in Nyandarwa. Its dynamic nature means knowledge has to be updated continually to avoid conflict, once solutions have already been found to a situation. Local people, including farmers, landless labourers, women, rural artisans, and cattle rearers are the custodians of indigenous knowledge systems (IKS) (Rajasekaran, 1993). Moreover, these people are well informed about their own situations, their resources, what works and does not, and how one change impacts other parts of their system (Butler and Waud, 1990; Rajasekaran, 1993). For example, the women of Nyandarwa chose to plant vegetables that are perennial as opposed to ones advocated by a certain development program.

IKS are overlooked by western scientists because of their basis in oral tradition. The atmosphere in the west, laboratories and libraries allow ease of production and preservation of knowledge. IKS concentrate on adaptation of knowledge and are less formal in social organization. Simple as they appear, IKS are tuned to specific needs and the quality and quantity of available resources (Pretty 1991). They pertain to cultural norms, social status or physical conditions such as multiple roles and multi cultures local women may experience. The efficiency of IKS lie in their capacity to adapt to changing circumstances. One has yet to see an analysis of IK in cultural change, reflecting the political, and socio-economic factors that alter this knowledge.

A popular view of IK has been as a part of the romantic past, a major obstacle to development, as a necessary starting point or critical component of a cultural alternative to modernization (Norgard, 1984, p. 7). Primitive societies could be raised to civilized status through western education and Christianity. Systems of knowledge are mirrored in systems of domination such as north/south, and male/female. Western bias and disdain (Haynes, 1991) shown by urban elites toward rural peoples is a reminder of the power of this negative attitude. Only rarely is IK treated as knowledge of value (Rajasekaran, 1993). One Kenyan politician, in a press conference, acknowledged the government's inability to promote an indigenous food policy and threw the responsibility to non-governmental organizations (NGO). "If

NGOs can believe in this" , he said, "If they believe development can only come by combination of modern knowledge and indigenous knowledge, that is there, then they (NGOS) should carry it through in their plans" (ECONEWS, 1993).

IKS are diverse, but this study focused on strategies and techniques developed by the women to cope with socio-cultural changes and environmental conditions such as migrating to Nyandarwa District. Further, it examined the decision making skills of rural women that draw upon the resources they have at hand (Rajasekaran, 1993). What is not always reflected in objective reality is women's behaviour because of socio-cultural constraints. Having to solve a specific problem is not the typical case, but out of it, as is later illustrated in the decision tree model that results from this study, adaptive knowledge develops. Increased pressure for food production has led to gradual disappearance of some plants and animals from the diet of local people (Rajasekaran & Whitefold, 1993). IK as a basis of decision making frequently is unknown or overlooked by development workers seeking solutions to food problems (Warren, 1991). Too often there has been no systematic record documenting knowledge systems: what it is, who does it, or the local approaches to changing it (Otteh, 1991).

Little effort has been made in academia to understand local knowledge systems. It is wrong to consider all traditional knowledge as inoperative. For example, the neglect of local classification systems of food reflects the technical message syndrome in extension (Gill, 1988). It represents a top down approach of outsiders. Women or local people are seen as recipients of nutritional messages, but not as originators of knowledge. IKS may be implicit within local people's practices, actions and reactions, rather than as a conscious resource (Reijntjes, 1992). One needs previous experience to understand the context. Human understanding is script based (Gladwin, 1983).

The Nature and Origin of Women's Knowledge

To focus on the nature and origin of women's knowledge is a political act. Documenting and acknowledging the importance of women's knowledge is equivalent to redistributing power by recognizing women's ways of knowing as a resource (Cashman, 1991). Traditionally, women in Kenya were responsible for such matters as food, medicine and wood fuel. Not only have these roles been undocumented and ignored by current development approaches, but this oversight means valuable knowledge about important survival strategies has been lost. Women were the 'experts' on these matters. Among the dead and disappeared, science has lost humane and ecologically feasible futures (Brokensha et al, 1980).

Shared cultural knowledge shaping women's behaviour has not been explored. Women's knowledge is role specific knowledge which not only becomes routinized by habituation, but also gets institutionalized with time. The knowledge becomes operational because women are involved in production, selection and preparation, to ensure adequacy of family meals. This knowledge is also passed from woman to woman. Given the same environment, individuals adapt themselves to it according to their dispositions, in their own way, which is preferred. One may seek to change it, make it conform to specific needs, another may prefer to change and moderate desires. But when one comes across a social phenomena such as food use, one is surprised by the astonishing regularity with which they occur under the same circumstances (Durkheim, 1966).

McFadden reminds us that women's knowledge has always been trivialized or confiscated when she says:

> Throughout human history, women's knowledge has been appropriated by men for various purposes. Health is one of those spheres where women's knowledge and practices have been usurped and used by men to further their own interests. Most women know that our fore mothers were the first healers in all societies. Yet as medicine and healing became a source of social

> influence and economic power, men appropriated all acclaim and barely acknowledge women's role as knowers in the creation of the healing process.
>
> The same can be said of women's knowledge about food and food processing.While men have looked down on women's knowledge as it relates to reproductive activities, they have not missed any opportunities to appropriate and exploit such knowledge when it served their interests. A clear example of this is the transformation from domestic workers/cook to chef when women's cooking skills and knowledge are appropriated and relocated into the public sphere. Being a chef implies enormous status and prestige, which are reflected not only in the disproportionate economic remuneration such men receive, but also in the social awe they inspire (McFadden, 1993, p. 69).

Rocheleau (1991) questions the neglect, suppression and even extractive collection of women's ethnoscientific information. Further, she explores the oppression and empowerment possible by the use of their own science of survival. Women have a distinct role as daily 'managers' of the living environment which is taken for granted. The experiences of women in all aspects of social existence are constantly challenged vis-a-vis those of men, especially when those experiences are located in or related to the domestic sphere. Therefore, the epistemological issues surrounding the validation of women's knowledge are problematic (McFadden, 1993).

Women's ecoknowledge, that which focuses on herbs, trees, plants and soils, can improve our collective ability to survive. It can be a contribution to sustainable and equitable development. For instance, the importance of edible wild plants during drought/seasonal shortage was reported in a pilot study conducted earlier by the researcher. This knowledge should not be extracted in 'bits' that suit governments or NGOs, but there should be efforts to understand it as a whole system. The pilot study for the current study also indicated that the knowledge gap between generations of women is not nearly as pronounced as that for men. There is valuable knowledge preserved by women to be learned and appreciated. Each generation of women receive a stock of knowledge, but how does each generation change that? How have the women of Nyandarwa used it as a resource? The answers to these questions connects habituation to experimentation. Experimentation further builds up the stock of knowledge and language, passing it on orally or through participant observation, allowing accumulation. So far, due to rapid social change, there are too many stimuli on women. But the women too, ought to be aware of the stock they have and act as stimuli to others and to themselves. That is the essence of a common intense experience.

One of the risks in the process of identifying women's knowledge is their interests in food and food related activities can be co-opted and spread in a manner that may not be in their interests or it may be used to exploit them. IK risks co-option by existing ruling formations (Flora et al, 1992). This knowledge, including those facts concerning the ways women may unreflectingly participate in their own victimization, may be convenient or comfortable to others. Many women are in the process of gathering any and all information as long as it sells. They can thus exploit themselves as objects of knowledge. To rush out capture, preserve and use or market local knowledge or the products thereof can lead to exploitation of marginal people. On the other hand, knowledge generated under histories of oppression and related situations of austerity such as poverty, gender, subordination, and rurality may offer insight for a more sustainable future. The facts, even difficult situations, are a source of self and social knowledge, a means of creating a future free of domination. Women must have a sense of knowledge that is important for their empowerment.

Abwunza(1993) asserts there is a need to recognize where the action belongs in terms of conversations between cultures/ in research. The scholar receives data from those who inform and not as one who collects data from informants. Therefore, ways must be developed to increase local people's participation in the design and development of their own informational resources, as well as their access to the benefits that result. Local people should be in charge at all levels, in all stages in the development process. Furthermore, there must be recognition of the consequences of cultural imperialism, especially for the roles of women. McFadden comments during colonial rule there was a

> ...transformation of the female into a "civilized" and loyal representative of colonial interests, in particular her construction as an

> extension of the "civilised" male native... Running through the entire logic of women's knowledge on food was the inculcation and the insistence that western culture social behaviour patterns, and the insistence that western culture was/is best. The result was an imitation of western eating habits, food, culture and manner of dress, and social interaction. Indigenous foods, their preparation and presentation, and the nutritional value of what was not included in the British Food Guide was deemed substandard and reflective of 'the other'.
>
> Therefore the racist underpinnings of the colonising mission, combined with the arrogant assumption that African culture was inherently inferior to western (British) culture, gave rise to a new class which was politically, socially and culturally a child of the colonial system. In Kenya, this class is clearly visible, and most middle class women continue to uphold an essentially western representation of womanhood/wifehood/motherhood, that is only slightly tempered by the practice of some African culture and dress (McFadden, 1993, p. 69-70).

One has to understand that local knowledge and culture based capabilities are a means of power and can therefore be a means of empowerment (MCornicle, 1988). By focusing on empowerment, feminist pedagogy embodies a concept of power as energy, capacity, and potential rather than domination. In the case of the women as mediators of family nutrition, they need power both as a way to maintain a **sense of self** and as a way to accomplish ends (Shrewbury, 1987, p. 8). The development of any nation is a political matter; However, the politics of food are felt more intensively than other issues, for food is fundamentally different from other material goods used by people (Hooker, 1977).

Legitimizing knowledge of food systems can be a source of empowerment for local people, especially women. This validation empowers women by linking their abilities to the larger context/world view. In the specific case of local products, verifying the actual nutritional values of foods can legitimize traditional knowledge. Food analysis can discount common convictions that local foods are inferior to exotic or introduced ones. There is need to see and identity differences in cultures and knowledge bases not as instruments of division, but as unifying/complimentary forces. When seen as an instrument of division as in the case of those who have and those who do not, power may be explicitly denied/taken or even withheld from women (Abwunza, 1993).

Scientific Approaches

Modern scientific techniques serve to accumulate information. However, they often fail to take sufficiently into account the distinctiveness of a particular cultural, social, and ecological space. Furthermore, the structure of modern science and its self importance result in not much information being taken "home". It is not sufficiently relevant locally. Information services stop at the kitchen door, at the document of the researcher or at the gate of extension services (Murray & Maina, 1993). Stopping at the kitchen door means that while where and how a food crop grows may be known, its uses in the home are not necessarily explored.

Scienticization, on the other hand, may separate the technology from its context. It removes it from its setting. It takes away from the communities' power over use of the knowledge, especially in research cases where the final users are illiterate women. Local knowledge, especially women's knowledge about solving day-to-day food problems, as crucial as it is, is ignored and debased. Women as a muted group are excluded from formulating, validating formal and transcribed meanings and thus denied means of expressing themselves (Rocheleau, 1991). A new position is necessary that women's voices along with their actions, will assist in revealing women's power (Abwunza, 1993). When we focus on multiple voices and contradictions present in specific times and specific sites, it is impossible to support a universal call. There is power hidden in universalization, power to say what and who other people are. Power to ignore their self definitions, their own definition of themselves and their world view (Holland, 1990). This form of knowledge production preserves the form, but removes the content. When gender is not taken into account, one of the results is promoting men as the norm. (Men are even asked about women and to provide their answers in research.) Like Abwunza (1993) and Amadiume (1987), many African women feel the ideal representation of experience of African women's lives should be entirely their own.

Studying Women's Knowledge About Foods

Studying the domestic food cycle should start with an understanding of how people use a cultural classification in grouping foods into a meal or diet. Often the explicit inherent notions of health, disease prevention and control are reflected in traditional food uses. For example, among the Kikuyu pumpkins are considered good for the eyes and herbal/bone soup stops bones from "knocking". Taxonomic categories/names/labels are the basis of any knowledge. Categorization is a social definition/description that suggests names and rules of what, when, who and why. Explaining goes beyond a description to give attributes. Giving attributes permeate order in every day life. This tells what the women know of the foods and what they can report of such knowledge. Taxonomic analysis is used as proxy for overall knowledge. The language used and actual behaviour observed objectify this knowledge.

There are recurrent patterns that grow into a social structure. In the case of food consumption, the process is habituation. All human activities are subject to this. This reduces the problem of decision making or making choices at every point in life. Humans organise things to make life easier, after which they are taken for granted/pre-attentive. This gives a sense of stability and security to an action. When these actions fall under social control, such as who eats what and when it is eaten, then they become institutionalized. The social self acquires a role. Women have role specific knowledge of production, selection and preparation of family meals. The role and the institution have a reciprocity. The institutions have changed over time for traditionally food production determined what was selected for consumption and what was consumed in what season. Shared knowledge is reduced by migration and social circumstance. The roles have not only remained but have multiplied. Traditionally food was just food. Food now has labels that set limits and serve as categorization devices. These labels are used to select foods. They designate actions. The everyday reality of why people are eating what they are eating is an interaction of the prescribed role of the women, tradition, region they are in, and other social realities (Berger and Luckman, 1966).

In some of the explanations from the women some examples of tradition, sedimentation are inferred. The women of Nyandarwa encountered a 'problem' when they moved to a new region. How have they integrated this 'problem' into their reality using their role specific knowledge? How has this been routinized in decision making? How has habituation led to a pre-attentive phase of decision making?

Using decision studies, the goal was to model how people make real world choices and to identify the specific decision criteria used by most of the individuals in a group (Gladwin, 1991). The results help to identify intervention points in the decision process, important constraints blocking desired action and frequently used reasons which could be encouraged. One has to identify the specific cognitive strategies and the traditional decision criteria before one improves on it (Gladwin, 1989). Perhaps the most salient feature of ethnoscience research with rural women is that it can create space and opportunity for women themselves to take stock of the larger scale processes working against economic, ecological and cultural diversity in their environment (Rocheleau, 1991). With any interaction there will be change. In that change one should never loose sight of the individual. Ethnoscience research has catalytic validity. Knowing reality in order to transform it or be transformed by it, 'becoming' (Rogers, C., 1950)

People in real life choice contexts do not make holistic assignments of utility or satisfaction to each alternative in their choice set, separately formulate subjective probabilities and then pick the alternatives with the most expected utility. To argue that meat/beans are eaten only because they are available ignores the fact that people are highly selective. Operational reality provides the context, and perhaps, sets the boundaries for decision making. However, it is the cognitive model that defines indigenous decisions or available categories of choice, (perceived options), evaluation of risk, access, and peoples' response to opportunities and constraints posed by operational reality.

These decision criteria are crucial as women are the mediators of family nutrition. They are important in Kenya because with the frequent food shortages, price increases, and competing needs, malnutrition is likely to increase. There is a growing awareness that indigenous science related to food may contribute significantly to current understanding and future survival. For example, not consuming meat and milk in the same meal was a means of resource conservation among the Kikuyu and Maasai. Diversity in food supply will go a long way to alleviate seasonal hunger.

Significance of Study

Women's ecoknowledge is vital for households and communities. It is an important resource to policy makers and to educators wanting to bring about nutrition change/interventions. Research of this nature will have a significant impact only when it makes/lets people develop self respect, confidence, and pride in their own unique knowledge and capabilities. It is a bid to meet strategic needs of women (Moser, 1989). It can help to build their sense of power which was lost during colonialism and is reinforced continually by the colonial legacy. In the transformation, once information is repackaged for use in the communities, it must not become alien and a tool for oppression. The women cannot be made to feel ignorant of the very knowledge they generated. It would be a claim to something from which they have been socially excluded. We must acknowledge their value as the keepers and transmitters of valuable traditional knowledge. Further, we must explore the possibility of peer education based on shared experiences.

The life course perspective approach provides a framework of how women's lives have changed in the third world (Stratigos & Masini, 1991). It also avoids an analysis which ignores the actual life experiences of individuals. Validity is seen in how the women are represented as mediators of family nutrition and custodians of valuable knowledge and how individual women have responded in providing optimal nutrition for their families and themselves. This innovation will in turn influence their daughters or female relatives who will follow later. This too will have an impact on economic development and social change.

CHAPTER THREE

METHODOLOGY

Introduction

This study explored and examined the meanings and decision making process about food among the women of Nyandarwa. Specifically, the focus was the ways three generations of Kikuyu women categorise, perceive, describe, select and use food for their families. Critical anthropologists have argued that much bio-cultural and ecological analysis is such that social rules are transformed into facts which lead to a denial of the influence of social forces upon phenomena of interest, in this case, influence of food habits on nutrition and health of communities (Jackson, 1993). The object of ethnography is to describe social activities and to locate these activities within the context of their occurrence (Jeffrey, 1981).

Data on the impact of food habits on food consumption and health are usually collected by participant observation and selective interviews. Qualitative research then becomes useful to explore issues which involve social phenomena, and "studies that are concerned with perceptions and behaviour as opposed to physiological process/biomedical function". Such approaches highlight differences between people and contradictory positions which may otherwise be ignored. These then can be examined as legitimate. In Nyandarwa district, little qualitative data is available and qualitative research is appropriate to explore the experiences of women, and examine cultural meanings of food among the Kikuyu women without imposing rigid research parameters on their investigation (Roche, 1991).

Meanings are formed through interaction with others (Chapman & Mclean, 1993) and people who share the same environment tend to construct similar meanings to things. The aim of the study was explore the phenomena from the women's perspective in their environment and to decipher these meanings by interacting with the women in their natural everyday environment. Hence my choice of an ethnographic mode of enquiry.

Methodology

The study involved qualitative and quantitative data collection methods. The three basic data collection methods employed were unstructured participant observation, in depth biographic interviews and document analysis.

The researcher spent three months doing field research in Ndaragwa division of Nyandarwa district in Kenya, from mid-May to August 1993. The sequence for data collection was as follows. Upon arrival in Kenya, the researcher was issued with a research permit from the Office of the President. The researcher also contacted several agencies including the Museums of Kenya and Kenya Energy non-governmental organisation, for information on indigenous food plant programmes. According to requirements of the research permit, the researcher reported to the Nyandarwa district headquarters and met with the District Agricultural Officer and several Home Economics Officers. It was after consultation/discussion with these two officers that Ndaragwa Division was chosen and arrangements were made for the researcher to access the division of her choice. Ndaragwa division was chosen because it has two distinct ecological zones: the high potential and the low potential zone. This distinction is based on agricultural potential of a zone which determines transformation of agricultural produce into other resources. This is the distinction used in government documents, based on the premise that land is an asset, and with reliable rainfall, can support a lot of agricultural activity. The level of agricultural productivity serves as an indicator of socio-economic status within the district.

At the division headquarters two women's groups were selected as the entry point into the community. Arrangements were made to meet the women groups on the days they met for their weekly meetings. There was a different day for each group which delayed considerably the researcher's entry into the community. Though the researcher would have preferred to meet the groups on her own, it was expected that a government official would accompany her. Consequently, the locational extension officers introduced the researcher to the groups. This initially gave the impression that the researcher was from the government. This notion was later dispelled through close interaction with the women.

After the researcher had explained what her mission was, key informants/participants were selected according to age group, zone, length of time spent in the district and socio-economic status. The latter was on the basis of the ecological zones of the groups. Six to eight women were selected from each zone. Finally a total of fifteen women were selected and consent obtained from them. Further, an interview schedule was drawn up. The researcher, explained that the study was to be done jointly with them, and their time and privacy would be respected. The visits and interviews were to be at the women's convenience and they would be visited individually to provide for privacy. During a typical week, interviews were conducted on three days and two days were spent either writing up previous observations or planning for the next interview.

Besides interviewing and visiting families, as a member of the community, the researcher did some participant observation and attended family events to which she was invited. The researcher had grown up in the district and spoke the local language fluently, which facilitated her entry into the inner circle. Like most of the informants she was born and spent the formative years in Nyeri, moving into the Nyandarwa district with her parents eighteen years ago. Going to school away from the district had sensitised her to certain distinctive features of the foods eaten in the district. By getting involved in the local women's everyday life, she gained their confidence and dispelled notions that the women may have held about researchers.

Participant observation is a major form of learning among Kikuyu women. Traditionally, mentoring of the young by the women is key too. Information not acquired orally is accessed through observation and emulation of actions of others around you. The fact that one does not need to be 'told' everything is explicitly acknowledged among the Kikuyu, for actions speak/ too. The motto is, ***Wana ruona, anarumenya.*** This translates to "watch, do, learn, then you 'know". Words do not tell the whole story. The 'story' is too long and too deep for words, and therefore first hand experience is the best teacher '.

Sample and Characteristics

Data were collected from a sample of 15 Kikuyu women in Nyandarwa district of Kenya. The aim of sampling was to identify a representative group of women involved in food production, with varied ages and a broad range of circumstances in terms of education, socio-economic status, education and exposure to different social stimuli.

The sample was selected purposefully as is typical of qualitative research (Spradley, 1979) to access women with specific but varied characteristics (Chapman and Mclean, 1990). For example, two ecological zones were selected to address the socio-economic differences within the district. One zone was the high potential, while the other was a low potential, an almost semi-arid zone. The residents of the high potential zone had lived in and owned land in the district since 1964 and had been exposed to a variety of extension services. The low potential zone residents had been in the district longer than the previous group, but had owned their pieces of land for less time, since 1981. Before that, either they or their parents were *athini*_/squatters on large European farms. The majority of these women and their families had migrated from the traditional Kikuyu district of Nyeri to Nyandarwa. {See table three}. Two were from Kiambu District. Two of the younger women had grown up in the 'white highlands' where their parents had migrated from Nyeri to work for British settlers.

The ages of the women selected ranged from 28-65+ years with a mean of 44.5. The sample was further classified into three age groups. Four women were over sixty years, eight were in the middle age group of 30-65, and three were under thirty. Initially the intention was to have age groups equally represented, but the over sixty age group and the under thirty were under represented in the population and therefore fewer of them were included. Two of the women had secondary school education and one had a teacher's certificate. The rest of the women had no formal schooling except for a limited number of sessions in an adult literacy class. All the women were active members of a women's group that had exposed them to some basic nutrition concepts and programs. All women had been resident in the district for at least ten years. The duration of their residence in the district at the time of the study ranged from 10-35 years with a mean of

28. All the women were of the Kikuyu tribe, married with children and lived on their own piece of land. None of them was divorced, one woman was a widow and one of the women was married as the second wife. None of the women was nursing a baby or pregnant at the time of the study. None of them had been formally employed for more than six months. One woman had lived in town with her parents before she dropped out of school. None of the women are related to each other by blood or marriage. All the women were responsible for family meals and were the home makers. Women from the low potential zone had all previously lived in one settler farm, pooled resources and bought their own land which they later subdivided according to number of individual shares.

The land was originally used for herding and grazing, but it is now used for mixed farming. This explains the low agricultural productivity in the area because the small pieces of land cannot sustain a large herd and at the same time the zone is unsuitable for crop farming. The women from the high potential zones had bought their land individually, immediately after independence and settled there. The upper zone can support mixed farming comfortably. They had many family assets. Evidence of transformation of resources was used as an indicator of socio-economic status, besides being owners of land, which is the traditional criteria of wealth among the Kikuyu. Material factors play a large part in food selection (Messer, 1990) especially today when food is commodified. Some families have land in Nyeri district as well, but it was left under the care of their relatives. Later the researcher interviewed a woman who was a squatter on one of the *shambas* or plots of land.

Data collection

Indepth interviews were the main method of data collection. The researcher used a topical guide developed in advance, but this was adjusted as the need arose. The general topics included an historical review of food consumption patterns/habits, current consumption patterns and ways of and reasons for using certain foods. Finally, participants were asked what they perceived as constraints to adequate nutrition, what they would do differently if those constraints were absent, and what they are doing presently in the face of the constraints. The intent was to identify/elicit local terms of food, indigenous categories of food, forms of food elaboration, the idea of adequacy of a meal and general meanings attached to food related activities. This included the decision about what goes into the 'pot'/meal and how that relates to health. The interviews were conversational to allow the use of words of the participants' own choice.

Techniques from Spradley (1980) and Huberman (1979) were used. All the terms elicited from the women were compiled and missing terms added. The researcher did not attempt card sorts as previously intended because of the literacy level of the older women. Instead, verbal categorization of the foods was used based on the first and /or second interviews.

Interviews

Two to three interviews were conducted with each person. At least one of these interviews took place at the home of the informant at the convenience of the participant and the other(s) interviews were done at the women's group's communal garden or at the group leader's house. This arrangement made it easier to access more people in a day because their homes were far apart. The first interviews took a long time to complete due to the travelling and walking between homes. The second and third interview schedules were adjusted accordingly. Two to three interviews were conducted on a typical day. Quantitative information collected included a food consumption calendar, general demographic information and family sources of income.

The topical guide included the following information:

Life history (General information on the family: Age of woman, length of stay at district)
Historical trend- History of food habits as they recall them
Foods consumed in childhood/changes in food consumption over time
How boarding school food compared to home.
Identification of all foods consumed to date -methods of acquisition for each category: bought, grown, given, traded.
Family meal patterns Yearly, weekly, monthly, daily.
How do they select/prepare the food consumed?
Quantities consumed. When they eat them and what? Different occasions?
Perceived constraints/problems.

Ifps(Indigenous food plants (ifps) What they are?Indigenous food plant project (ifpp)). How they got involved?
What they have planted and now use? Constraints.

All interviews were conducted in Kikuyu and were audio taped, transcribed and translated into English. The translations were done with help from some community members. The terms the participants contributed on types and forms of food they consume were sorted in terms of frequency of food consumption. The categories were based on foods eaten: daily, frequently, occasionally or never. Further, it was assumed that this information would reflect decisions about food selection. In terms of sorting, it was assumed that women share a common basis of knowledge about food use, selection and preparation. After sorting additional questions were asked to clarify the categories. This form of contrast did not provide an obvious or complete order-system into which verbal categories could be placed because the lower zone was experiencing a drought. Their categories were fewer and based on what was available at the time. This incomplete order-system was solved by looking into documents, participant observations and especially overhearing informal conversations among the women.

Three set of notes were kept by the interviewer. These were the field notes, an analysis of researcher's reflection and feelings about the situation, and a note book on the proposed action changes and issues to pursue the following day.

Participant observation

The social position of a researcher determines what is likely to be seen and what is seen depends largely on a particular position in a network of relationships. I was seen as one who belongs to the community and as woman; I could enter the inner circle (Spradley, 1980). This means I had a dual role, a researcher and member of the community/inner circle, exclusive to the women. This enabled me to be involved in the daily activities and yet question tacit knowledge.

Nyandarwa District and specifically, Ndaragwa division has been described as a 'progressive' village. In the literature, there was a lot of etic but not much emic information. The home visits were important. They made it possible to contexualize the information I got from the participants. It enabled me to see the women in the appropriate context, at home and in the kitchen. I observed the kitchen and foods eaten. The varied levels of technological innovation influence the type of food that can be chosen for preparation. The garden was of great importance to me too. The food store, water storage/harvesting techniques and the presence of animals and the way food related activities fitted in with other family activities were noted.

I explained to the women that I wished to learn about all the kinds of foods their families eat. I emphasised that I had a special interest in the ifps. It was important to the women that I explain that I was not evaluating their consumption habits, but rather I wanted to know/get a glimpse of how they lived on a day-to-day basis, in order to represent them appropriately. This information included what they ate and why and how they selected and prepared food in the light of rapid social change. I explained to them that I appreciated the fact that they are all different and have different realities of life. As a result I was not just looking for commonalities, but also differences among them as well. I listened to women as they talked to each other about food and as they talked to me when I was not interviewing them, that is when the formal interviewing time was considered over. I also observed foods that were served, gardens and food available in the weekly markets and noted the corresponding prices.

Entries were made into three note books. One contained things I was able to observe, the second had information given by respondents but not on tape, and the third contained the planning process for the next interview based on the first two interviews. At the end of the week's interviews, a file was built with general sub-headings to which new entries were added each week.

Adequacy

Triangulation was used to enhance credibility by purposive selection of the women, and use of multiple methods. The use of triangulation/multiple methods verifies and helps to interpret information gathered. Multiple interviews clarify concepts and issues raised in earlier interviews. I have been explicit about the context of the research so as to allow others to assess the degree to which findings may apply to other groups of women or tribes. An oral interview is appropriate in this context because an oral methodology is an integral part of the Kikuyu tradition of passing on, giving out and acquiring information. Questioning is even encouraged by the saying *kuria ti urimu.* This translates 'to question issues/things/asking for the way, does not signify ignorance, it is in fact a form of knowledge.'

Other than for the initial translation and transcription of taped interviews, all the interviewing, and coding was conducted by the researcher. The author later verified the adequacy of the translations by comparing them to field notes made to ascertain the context in which the answers were given. Literature on document analysis, information from the Nairobi Herbarium database, Central Bureau of Statistics, the programme implementors, and educational materials were also obtained.

CHAPTER FOUR

SUBSTANTIVE KNOWLEDGE

Analysis of any data involves a way of thinking (Spradley, 1979). The analysis, specific to this study, involved a systematic examination of the foods used by the women in the district in order to determine relationships among the foods and to food consumption/food use.

A taxonomy that defines/describes the internal structure of the kinds of food elicited, described and used by the women was completed. It also identifies contrast sets. The women's knowledge was not random and the taxonomy represents the way the bits of information elicited were conceptualized by the participants. Further, a componential analysis was done. The componential analysis involved a search for attributes that signify differences among kinds of food.

Taxonomic Analysis

Table two presents the taxonomy of foods as developed from the information of women of Nyandarwa. In this study a category of food stands for an array of distinct food items that are treated/taken as equivalent. Most terms are denotative, they refer to specific sources. For example, case goat meat, beef, chicken are in the same category of nyama/ meat, which can be further subdivided into various cuts (Spradley, 1979). These distinct items are related in that they all are types of meat, but from different species of animals. Some categories are related by opposition as in what is eaten versus drank, grown versus raised, bought versus raised/grown, dry versus green and traditional versus introduced. Such a symbolic category that includes other categories serves as a domain. The domains in this case have two or more included terms that have semantic relationships such as kinds of meats, or ways of food preparation; domain terms are used as cover terms.

Table 2: Taxonomic Analysis

Kinds of food	Staple	Cooked mixed items	githeri	ordinary beans
				Pigeon pea
				Njahi
				fresh food stuffs
				fried
			mukimo	ordinary beans
				others
				with green leafy vegetables
			gitoero	from tubers
				meat
				vegetables
			Ugali	
			mixed rice	
		cooked single items	arrow root	gitoero
				boiled whole
				roasted
			yam	gitoero
				roast
			banana	mashed
				roast
			sweet potato	roast
				boiled
			green maize	boiled
			potato	roast
				red skin
				white skin

Table 2: Taxonomic Analysis Cont'd

Kinds of Food	Non staple	other	meat	beef		
				goat		
				chicken		
				sheep		
			fat	animal		
				canned store bought		
				ghee		
			bread	baked/bought from shop		
				chappati		
				pancakes/mandazi		
		'beverages	tea	with milk and sugar		
				without sugar (ndubia)		
				without milk (true tea)		
				Others		
			soup	from the head		
				bone stock		
			porridge	plain maize meal fresh		
				fermented sorghum		
				fermented millets		
				malted		
				fresh mixed grain		
			milk	fresh		
				sour		
				mixed with bloood		
		vegetables		leafy green (nyeni)		
				cabbage (mboga)		
				squash	leaves	guard
						pumpkin
					fruit	pumpkin
				others	carrots	
					onions	
					kale (sukuma wiki)	
		fruits		wild	berries	
				indigenous	others	
					oranges	
				introduced	tomato tree	
				home grown	pears, plum, apples, peaches	

To contrast and distinguish foods within the categories the women used certain elements of information regularly associated with a category, attributes of that food (Figure 1). For example, the term 'traditional food' is associated with one's original district, childhood, disappearing/disappeared, not seen any more, certain methods of cooking, certain events, grown, occasionally brought in from district of origin, healthier, tastier, more variety and sorted out in gender, age, status terms.

Introduced food on the other hand has the following attributes: brought by/ produced by/ consumed by *Mzungu*, not consumed in childhood, associated with *maendeleo*, progress, urbanization, education, technology, packaged, bought, comes in specific quantities, more common now. Figure 2 presents words and processes that describe the two categories (See appendix).

These attributes serve as dimensions of contrasts among the foods. Every attribute or category then serves as a boundary, a label that distinguishes one food from another. The cover term *githeri,* states that *githeri* is not *mukimo* and vice-versa but the two are related in a sequential manner. Making githeri is a step in making *mukimo*. Having one attribute does not exclude the possession of another neither do all categories have the same attributes to the same extent. Value accorded a food is attributed to the extent to which an attribute is present or absent in a food. This value determines how a food is used. *Njahi* and Kikuyu pigeon peas are held in high esteem and served on special occasions. These will not be consumed on a typical day. Their cost at the market is higher than the common varieties of beans. They are also harder to grow. *Noe*/ broad bean on the other hand, is said not to be consumed any more due to perceived physiological effects.

In contrast some categories include other foods nested within them. Within *githeri* and *mukimo* the category allows elaboration and further differentiation, by use of different kinds of beans, or inclusion or exclusion of vegetables. These options provide variety in texture, color and taste. The foods belong to one set, but contrast each other within that set. The same case applies to locally ground whole meal flour as opposed to sifted packets of store bought flour from either maize or wheat. The different types of beans fall into this set too. Food elaboration by the style of cooking is also a way of identifying/distinguishing between foods within the same category or domain such as boiled, roast, mashed, fermented, sour.

In the form they were elicited from the participants, descriptions such as *ugali* appear incomplete. It is a stiff porridge that cannot be eaten on its own. However, any insider knows the term *ugali* is connotative, for it includes all the suggestive symbols such as meat, vegetable, or milk. Such a dry food stuff must be accompanied by something moist or juicy.

The category of *nyeni/* leafy vegetables does not seem to include cabbage. Cabbage is distinguished by the name *mboga,* the Kiswahili equivalent of any leafy vegetable. It is a borrowed term. Traditionally green leafy vegetables were added to mashed food to give a characteristic green color, taste and texture. The texture and colour of cabbage does not allow this. Carrots, tomatoes, *sukuma wiki/*kale and onions are also distinctly apart from other vegetables. They are food items that are added to other foods to add flavour, bulk and variety and are part of most mixed food dishes especially the *gitoero.* The *gitoero* may sometimes be identified with the item that it features most/in largest quantity such as the carrots, vegetables or roots. The common factor here is that all these foods were introduced and therefore set apart. Berries and wild fruits, are not considered 'fruits.' The women's concept of fruit is something large, luscious and juicy, domesticated, brought by *mzungu/* white man. Berries obviously do not fall in this category. They are collected from shrubs or bushes.

From the categories above, it seems some foods within a category cannot be termed equivalent in terms of use and worth/value attached to them by the women, even when foods are similar and equivalent nutritionally. Their value within the diet pattern is not the same. In cultural terms, Kikuyu pigeon pea and *njahi* are valued over other common varieties of beans. Consumption of introduced foods such as *chapatti* or rice does not make it ethnic because they distinguish what is traditionally

Kikuyu by Kikuyu name, such as the Kikuyu sweet potato and yams. The value of raised chicken is seen as less than that of bought meat. That one does not need money at hand to buy it means, it is not as esteemed as beef or goat meat.

Componential analysis

Every culture creates categories of food by taking unique things and classifying them as in real versus other, staple/non staple and anti foods (Falk, 1991). Categories introduce borders and labels on/between foods. Table 3 presents the information used by the women of Nyandarwa district to describe foods. There was a boundary between "natural" and cultural "inedible". For example, 'No Kikuyu ever ate fish in any form' (Leakey, 1920), a strangled animal was not and still is not consumed, ' no Kikuyu ever ate the meat of a bird' (Leakey, 1903, p. 280). These distinction are fading because the women are post independence settlers in Nyandarwa from other districts such as Nyeri, Kiambu and Nakuru. The only traditional/cultural knowledge they have has been brought from their original homelands and this too has been worn to trace by other forms. The women have been segregated from their original homelands; therefore, there is no constant reinforcement of the knowledge. The families are nuclear and in multi-generational families,s while families within the same compound have separate houses. Activities of one house are not related to another. The women also claim that things are *guthererwo*/clearer now, no food is wrong to eat as such. That is, other points of view have nullified those claims, everything is relative.

However, some cultural practices remain solid; for example, fish still features as a culturally inedible food to a certain extent. It is likened to a tadpole by some and as a dirty water snake by others. *Saget* and *murere* two indigenous vegetables extensively consumed by their neighbours, the *Lubwa* are shunned. Maize and beans are distinctly the staple. The potato is gaining prominence and is added to almost every mixed food dish. The potato has an operational attribute, to add bulk, to mash the food and to add variety in food. When they have no potatoes, the women claim to be hungry, which implies that food security is defined not only in terms of maize and beans but by potatoes as well. This notion of potatoes is absent in their mother districts.

Table 3: Componential Analysis

Category Dimensions of contrasts

Kinds of food : cover terms	**Provenience**	**Type of food**	**Who eats**	**New/ intro.**	**Variation synonymy**	**When eaten.**	**Associated. with**	**Source**	**Other**
Githeri	both old and new district	mixed maize and bean	all; Not kids	no	muthere, fried githeri different kinds of beans	any meal	haste, daily ingestion, school	grown/ bought	base for mukimo
Mukimo	both districts	mashed githeri with potato and/ or vegetable	all,/ no kids	no	green maize/ peas, without maize (kimitu)	any meal	satiety complete meal' Kikuyu	beans may be bought sometimes otherwise all grown"	referred to as irio in towns and books
ugali	new region	thick maize meal porridge	all	yes	ngunja gutu	all meals	satiety, luos quick, dry	milled grain	needs accompaniment ,daily/ frequent
Sweet potato	old region	tuber	all	white red	none	snack/ breakfast	old region, Kikuyu	now bought/ relatives	rarely eaten
Arrow roots	old region	root	all, men	no	none	snack, hot pot	men, satiety taste	bought/given	rarely eaten
Yams	old diet	root	all, men, elderly	no	none	snack/ hot pot	satiety, texture	bought/given	rarely eaten
gitoero/ mixed hot pot	new region	mixed food items	all	yes	meat, banana, potato etc.	all meals	frying	grown/bought	accompaniment to rice, ugali, chappati
Irish potato	new region	tuber	all, kids	yes	red or white skin	added to most meals	mukimo, progress, replaced banana and 'nyakahoro'	grown /bought	daily use, part of gitoero
Rice	both	grain	all ill/ visitors	yes	boiled/ fried with other items	holiday special meals	lightness	bought	occasionally eaten
Chappati	both	bread	all, visitors	yes	whole meal sifted	all meals	special taste	made/ flour grown/ bought	rarely eaten
Porridge	both	beverage	all, kids	no	Maize meal sorghum, millet fermented, malted, plain	breakfast/ any time	health, children, tradition, laborious,	grown bought	daily

Table 3: Componential Analysis: cont'd

Category **Dimensions** **of** **contrasts**

Kinds of food : cover terms	**Provenience**	**Type of food**	**Who eats**	**New/ intro.**	**Variation synonymy**	**When eaten.**	**Associated. with**	**Source**	**Other**
Soup	old	beverage.	women, elderly, men, ill	no	bone, head, chicken	any the time	health, appetite strong bones, age	bought domestic animals	rare, herbs added
Milk	both	beverage	kids, men, all, ill	no	sour, fresh mixed with blood, in tea	no specific meal	tea, revulsion, money, new region	own/ bought	used to eat ugali with
Tea	new	beverage	all	yes	with milk and sugar	any time	relieves head aches, completes meal Women	bought	daily consumption
Fat	old/new		all, kids	yes/no	animal canned butter fat	added to meals frying	flavor, good body/ smooth skin	bought/ from animals	daily expensive
Banana	old	fruit staple	all	no	ripe, raw	part of meal	kids, taste, quick food	bought	rare
Meat	both		all	no	roast, in hot pot, sausage, beef, chicken, goat	all	taste, money, occasions, men, health	bought raised	2x/month
eggs	new		all, kids, ill	yes	boiled, fried, in pancakes	breakfast, for visitors,	taste, money, health	raised/ bought	frequent
fruits	new old	single uncooked	kids/ all?	yes/no	wild, introduced.	all times	taste, health, 'mzungu'	grown bought	eaten when in season
vegetables	both	mixed in food/ cooked alone	all	yes/no	wild, domestic	any 'not breakfast	health, completes meal, frying	bought/ grown	overcooked, never eaten on] their own
squashes	both	mixed food single food	all	no	leaves fruit	anymeal	children good eyes drought	grown	leaves used for mukimo.

The categories have undergone historical and social change. Chicken which was not consumed traditionally, is a distinct part of the food system. Both the flesh and eggs are delicacies and are served to visitors and eaten on special occasions. Eggs are used to supplement children's food. All the women raise a limited number of chickens for meat and eggs. The social and historical change also applies to the consumption of tea as opposed to porridge. Tea, made with milk and sugar is an introduced beverage but features strongly in all social and family food events. Its value is related to the frequency with which it is consumed several times a day. "Any time is tea time", is a common cliche in Kenya. What is interesting is that the British, from whom the tradition of drinking tea was adapted, have fixed times for taking tea. This statement either shows a deviance of the colonial rules related to fixed meal time or a mockery of rules on food consumption imposed by the British. The Kikuyu may have thought the rules unnecessary and not worth enforcing. It also reflects the Kikuyu tradition of eating when hungry and therefore there has to be food, or in this case tea, all the time. The presence of dairy cattle ensures constant supply of milk for tea.

Brewing of traditional beer is illegal and the women would not admit to brewing or drinking it. The spread of Christianity put a stigma on the consumption of alcohol, especially by women. The government later blamed underdevelopment of rural areas on consumption of local brews. The church and the government have played a big role in introducing negative attitudes toward the consumption of local brews. Beer consumption is now confined to bottled beer, bought and drank from the bars mainly by men, for "good" women do not go into bars. This shows the effect of intrusion on food habits, especially those of women and on women being in public places. This effect of the private world of women is reflected in cases where women are discouraged from eating outside the home as well. The public domain is for men. The Christian tradition also prohibits consumption of animal blood in some churches in Kenya. This applies to sausages that are stuffed with blood/*mutura.* Despite the restrictions and stigma attached to these food items, they are widely consumed, and feature prominently in major family events, for beer and meat are consumed together.

The short inventory of food elicited in this study is linked to lesser functional diversity in the foods consumed. Encyclopedic knowledge is subject to social forces such as migration and in such cases, shared knowledge gets reduced. This knowledge is gained through personal experience and foods not used are salient. For example, the young women could enumerate terms of traditional food, but they have not used them. The reports indicate that a variety of traditionally grown and processed foods such as milk, porridges and tubers has decreased with time. Variety in the diet is now provided through the shops and the market. This, coupled with the distance from the store and high consumer prices, decreases the variety of foods actually consumed. The inventory is constrained by both the objective reality and biological diversity (Ellen, 1993).

One can observe more variations of maize meal porridge and 'whiter' mixtures of porridge. Traditional porridge was made from small grains of millets and sorghums. To conserve sorghum flour *mutu wa marigu/* banana flour was used. Sometimes mashed sweet potato was used in this manner. The reason may have been the ease of grinding smaller grains manually, the colour, taste and not having to rely on one grain for all their food needs and exploiting all resources available. The grain mills which are owned by individuals or families, have solved the problem of milling bulk grains of maize. Some mills are even designed for and restricted to milling maize grain. Mill owners may restrict milling of coloured grain to one day a week. To process the grain one has to have some maize as well to 'clean the mill with'. A few dishes like *gitoero* have been modified by addition of new foods like carrots and potatoes and onion, but no new name has evolved despite these variations. They are distinguished by the prominent food in them. It is important for the women to distinguish the mode of preparation, the bean used by name, and a food by name in case the mixed food contains a food someone cannot consume. In some mixed foods, individual foodstuffs cannot be distinguished visually. This additional information, then is crucial.

The formerly less eaten foodstuffs such as sugar, cooking fat, Irish potatoes and milled grains are now more common, and there are fewer varieties of vegetables and fruits. The zone and region one lives in contributes a lot to this reduction. The women cannot grow some traditional food in the new district. That is why the district of origin becomes an identifier/label to a food such as the Kikuyu sweet potato. At the same time, the upper zone can grow a larger variety of foodstuffs than the lower one. Limited supply may be a reason for not consuming a food. Sugar and cooking fat are the most frequently purchased foods, but these items are also most likely to be forgone. Salience about them appears in responses to questions, that is uncertainty and variability of responses regarding these foods reflect a shallow knowledge for them as opposed to extended knowledge of the major foods. Their uses are limited to addition of taste.

There are distinct variations within porridge and *mukimo/giteri*. These two categories are the foundation foods of the Kikuyu diet. One is a beverage and the other a solid food. Together, the two categories could form a complete diet regimen: food and drink. This form of categorization indicates substantive knowledge (Ellen, 1993). It includes attributes associated with food, how to process, being tastier than, 'male', perceptual criteria of colour. It is adaptive knowledge. It allows one to select and identify foods for specific end uses. It is dynamically adaptive knowledge. For example the term *mukimo* /mashed food has evolved from *irio cia mataha*. This not only referred to the food, but also to units/portions of the food ready to be eaten. In the latter, dry legumes and grains were used, while in the former either dry or fresh green foodstuffs may be used for preparation. Elsewhere in books and among people unfamiliar with *mukimo* is used synonymously with *irio* the Kikuyu term for cooked food/meal which mostly refers to the type made from fresh green food stuffs. *Mukimo* represents many forms of food, and different kinds of beans are used on their own or mixed to make it. The women distinguish the variety of bean used by name. When maize and a legume are boiled together, that makes *githeri,* mashing the food up converts it to mukimo. Bananas that were formerly used to mash in the food have been replaced by the Irish potato. The banana does not grow in the region now and has to be brought in while the potato is readily available. In fact, the district supplies the whole of Central and Nairobi province with potatoes. For special occasions the banana has to be brought in from another region. The *mukimo* can also be made with or without green vegetables. Use of green peas, which they grow in Nyandarwa, enables the women to produce the green colour characteristic of and desirable of *mukimo* without having to add any vegetable. However, green peas yield less when cooked than most dry legumes and one needs a large amount of green peas to achieve the desired color. In the dried form, the green color of fresh peas is lost.

Processing of porridge flour by fermentation, malting and mixing of grains provided variety in terms of taste, texture and food quality of porridge. Fermented porridge has decreased in prominence and fresh porridge with milk and sugar is now more common. The malted form is now almost exclusive to ceremonies and the skill to prepare it is almost gone. None of the participants brew the porridge on their own any more. The younger women cannot brew it and did not even have the gourds to do so. Some of the older women still retained the gourds but these were in storage somewhere. They cannot remember when they used them last. Besides adding variety to the diet, these variations catered for all ages and status. Now porridge has one standard taste, bland. Its present association with children and weaning foods may explain the logic behind this. Porridge in some homes is exclusively children's weaning food as opposed to tea, the beverage for adults. Most books refer to porridge as a weaning food.

Categories are not only relative to time and space, but social status as well. There is food for children as well as for men, women, the aged, lactating mothers and festivals. Because of the needs of children, their diet may vary from the basic staple. This categorization is not as distinct among the younger women as it had been for the older ones. It is possible that this category applied more in the past when families were extensively extended and were of multiple generations. Social categories were represented by a large group of people and therefore easy to reinforce and maintain through food.

Distinction on gender lines are faint and pertain to individual households. This features more in terms of quantities and quality of the food allocated than in terms of distinct foods themselves. From observation, men tend to get larger helpings of food and generous portions of meat. Their tea is creamier and is served in separate pots. Respect for men, is most frequently as the eldest members of the family and as heads of households rather than as a function of gender division. The assumption that they are engaged in harder tasks is yet another reason. Traditional bulrush millet was considered property of the man and was planted by his express orders (Leakey, 1903). Now it is the woman's business.

Categorization concerns not only the choice of possible foodstuffs, but also forms of food elaboration (Falk, 1991). This kind of knowledge reflects depth versus breadth. Terminologies reflect knowledge. Social factors, on the other hand, affect presentation of that knowledge. They reflect knowledge of kinds of foods they use. The categories of food elaboration reflect part of the objective and biological world (Ellen, 1993).

Conversion occurs from raw to cooked food, from grain to flour, fresh to dry form, raw to ripe form, souring and seasoning. There are also mixed food items and single food items. Mixed food items are combined in terms of hard and soft, heavy and light, as is maize and bean, cereal and legume that is categories in which one food is seen to go with other foods. These may include moist and dry, bland and savory or the intended texture of the end product. In mashed food a different potato is added from the one used in a hot pot or fried *githeri*. In the latter case, the potato retains shape while cooked, and in the former it mashes evenly. Regularity in structuring of meals is in terms of heavy and light, dry and juicy, bland and flavourful, pure impure foods: *ugali* and milk, rice and *gitoero*, white sifted flour and whole meal home ground, green and ripe bananas and tomatoes. This too is adaptive knowledge. Traditionally, the meal structure was a 'pot' of food as opposed to different foods cooked separately then put together to make a meal. Everything went into a one 'pot' dish.

I have also noted a few comparisons within the same group such as *njenga, githeri and ugali,* all derived from the same staple: maize. In *githeri* the whole maize grain is used, while *njenga* is a form of maize grits and maize meal is used in *ugali*. This one would suppose, is a way of varying the textures, taste, and cooking time of the basic staple. The variety of uses are meant to suit different people and individuals. There is a general belief that the *ugali* was not part of the traditional Kikuyu diet. That is not true, for they consumed it in various forms and textures (Leakey, 1920). The difference is that the traditional *ngima/ugali* was made from millets and sorghums and both fat and papyrus salt were mixed into it.

The 'other' foods shown in table 2 have one specific role in the system of cooking, that of substances of giving and transforming the taste and look of food or as an alternative to the staple such as rice or chapatti. They provide a basis for a second order conception of cooking. For example, vegetables are regarded as something to be eaten with meals but if people have a choice, never by themselves as a meal. These distinctions between "real" and "other" foods feature mainly in the phase preceding food preparation or the choice of food stuffs to go into the 'pot'/meal. Dynamism in food use is characterised by items generally used to complement the staple. These foods may be region or season specific. Items such as bananas, tubers and roots, vegetables, legumes, honey, fruits are incorporated in the diet to give variety, flavour or for lack of the staple. They may gradually/sometimes replace the basic food in a meal. Boiled green maize, typically a refreshment, when in season can be consumed as a meal. Small cereals such as millet and sorghum, sweet potatoes, yams, green gram, and banana, have gradually become 'other' foods in the present food system. Most do not grow in Nyandarwa, and the potato and cabbage are taking their place.

The value of the Irish potato in the diet is not obvious in the food categories but it is extensively used to transform food referred to as the operative attribute. Its main use is to add bulk and to transform the texture of food. Hardly any dish is eaten without the potato. Clearly, the diet is far from monotonous.

Thematic Analysis

Thematic analysis in this study looks at relations among the foods and how they link to the culture as a whole in order to give meaning. Meaning in this case refers to what the food represents in society and consequently the way it is used. Cultural meanings are created by use of food as symbols and the events that relate and surround or are surrounded by it. Along with the side categories of food, certain themes emerge strongly in the description of food. These themes are generalized and have come to be taken for granted, are in a domain which people seldom feel the need to express what they know (Werner et al, 1988). The following section discusses the cultural themes first. Cultural themes are relationships among the domains of kinds of food and its use. They are a description of what is actually known, knowing that/substantive knowledge (Werner et al, 1988; Ellen, 1993). Some of the relationships were explicitly told while others (tacit) were observed by the researcher on the basis of her familiarity with the culture.

Cultural Themes

Position of food

The position of food in society is clearly stated. This is a position/postulate, that is declared or implied and usually controls behaviour as well as stimulates activity. It is tacitly approved or openly promoted in society (Spradley, 1980, p. 141). *Irio*/meal refers to food par-excellence. It is necessary for the health, wellbeing and the welfare of the household through creation of wealth. It is also a cultural affair (Murcot, 1982), a product and reflection of norms and values characteristic of the Kikuyu of Nyandarwa. During the interviews the women consciously expressed cultural models of food and properties of domestic eating and their connection with other features of the household and everyday life. They could identify food precisely and implied rules governing eating. *Irio*/ 'pot' of food/meal then does not simply describe a food event for a particular time of the day. Food should be consumed when demanded or need arises. The processes and any formality/or lack of it is not part of the definition. It just has to be present daily in a cooked form and in adequate amounts. It is contrasted with snack/refreshment or part meal by being wholesome. The quantity consumed does not matter, but it must contain a staple.

Cooking is the manner of transformation and it is served from a pot/dish. The women acknowledge the fact that this takes time to plan. Other major activities are planned with this responsibility in mind. Each member of the family has their *ruiga*/share. An individual plate serves as a border between *irio/*it and a part meal or a refreshment. Clearly the women consider not only what to eat but also how and when. This instills a sense of responsibility in every one for their eating habits/ food provision for health. All activities are aimed at meeting food needs first before any other need (In line with Maslow). One feeds the family first, and it is only after this basic need is met that one should invest in other things such as livestock and land.

> *'utonga ni matigari ma nda'* or "Wealth is what remains after the stomach is taken care of.

This connotes that food is the most crucial basic need. Food is central to every activity. It is this stance that stimulates activities towards food security, such as planning, production, and processing for storage. This ties production to both consumption and storage. At this point both men and women divide/share activities aimed at achieving this goal; to cooperate within family to achieve an abundant, sustainable, food supply. Food security is seen in terms of having enough maize, beans and more recently, potato stock. Traditionally, and even now to some extent, everybody was somehow involved in the food procurement process but cooking was specifically a woman's role with the exception of some preparation of meat and soup. Ideally, the man provided/produced the food and the woman cooked for him. It was a reciprocal relationship. In fact for the man, his sexual partner was the person who cooked for him (apart from his mother of course!), and for the woman, he was someone she cooked for. Other activities, sleep, eating, leisure, work were done separately, away from the man. Food was the common ground.

Land is recognised as the main source of food, but for those who cannot farm or get enough from the land, formal *kibarua/* employment has emerged as an alternative mode of food procurement. Formal employment is referred to as *'kurimia'*, farming away from home. This is borrowed from the traditional 'food for work' / 'work for food' concept whereby food was used as remuneration for work done. The use of the term *kurimia* implies dependency and lack of control over one's life. The idea behind employment, then is to search for and provide food for the family. "Wira no nda' literally means "We work for the stomach", but otherwise means we work to eat and vice versa. Eating well brings hard work/productivity.

Losing a job, on the other hand, is referred to as 'spilling the beans/flour' and is likened to going hungry/without food/sleeping on an empty stomach. The state of not having enough to eat is unsatisfactory and is equated to poverty, multiple deprivation. In fact, food is seen as wealth, and this is more true now that food can be exchanged for money and vice-versa. Food is not only the most important item of wealth, but is an end/aim in itself for the women. The tacit nature of this stance is that women can be and actually are custodians of wealth. Food has turned out to be a major source of wealth for the women of Nyandarwa. Food as a commodity is treated as a separate theme later.

Being full is a key factor in health. The stomach put its own limits. No upper limit is put on food and in times of scarcity food is eaten without cultural restriction. 'I was so hungry I almost ate some fish'. Stealing of food to relieve hunger/*irio cia nda* is condoned, but one may not carry food away. "Only a foolish Kikuyu would die of hunger with food in sight." On the other hand one is not supposed *kuima mundu irio cia nda* /to deny anybody else food to eat.

In times of peace and plenty *ndia na mahoya/* feasting and praying feasting and prayer are major activities. Prayer and food is the highest level of personal satisfaction, a form of self actualization. At this point one is no longer pre-occupied with basic issues of food and wealth. One can relax and enjoy life. In this way food nourishes both the body, mind and spirit (De Bryne, 1985). Food is linked to the metaphysical for surely 'man does not live by *irio/*bread alone'. There are higher virtues. Belief in *Ngai wa*

Kirinyaga/God of Mount Kenya was the fundamental basis of life as a Kikuyu (Leakey, 1903). Any person who lost his faith in the religious beliefs ceased to be a Kikuyu for all intents and purposes.

Principles of food allocation

Besides recognising and asserting the value of food in health and wellbeing, it is recognised that within the family, different people have different needs for food which must be taken care of. Individuality is recognised as a crucial factor in nutrition (Debryne, 1985). This was confirmed by the women as in the following:

> I share out food and give everybody their own share. The children, the man and myself. If the food got finished, I would eat the scrapings from the pot.

In appreciating that children have smaller stomachs and that some people have special needs at different times of their lives, some of the women said,

> Kids have smaller stomachs that empty faster
>
> You cannot give children of different ages the same amount of food. They have different sized stomachs/appetites. The amount is reduced as the age deceases. They have to eat until they are full, according to size of stomach. The appetite/stomach grows with age/child.
>
> The elderly ones ate roasted yams. They were pounded and they ate it in that form. Then they drank porridge after. Some even pounded maize, for they liked the taste of maize but could not chew the whole grain.

Not all kinds of, and categories of food are appropriate for all members of the family all the time. This introduces a dimension of contrast in food choice.

> The kids eat just what we eat. When they are small, the kids are not given whole maize grain.

The fact that the children, the ill, the elderly and lactating mothers feature prominently in the examples given above indicate that the women recognize them as nutritionally vulnerable groups and special attention has to be given to them. Increased energy needs of an adult male are also recognised. The adult males were traditionally involved in hard manual labour. These views were built on the fact that most social categories were involved in similar activities and lifestyles. It made it easier to cater for different sets of life styles.

> The man could even get two servings.
>
> A man needs to eat a lot of food, to work hard

Food allocation was not only based on physiological reasons, but also cultural reasons. The woman eats last, or not at all because she is supposed to take care of other people's needs first. Restraint, self control is a virtue. Her husband and children are part of her. When she grows old and can no longer take care of them, they will take care of her in turn.

> Especially if it was the time of scarcity, the kids would eat first.
>
> The old elderly ate arrowroots, bananas, sweet potatoes and yams. They drank porridge. You see they cannot eat/handle maize and so these soft foods were designated as being theirs. Special attention was given to the old. They are like children. Some even ate/were fed earlier than the rest of the family, in case they fall asleep before the rest of the meal is ready.

Showing concern and paying attention to specific needs and preferences of individual members of the family is a major responsibility of the mother.

> Porridge is taken sometimes but children do not like to take it in the morning. They refuse. When they were a little younger, they took a lot more but now, that they are growing they refuse. (going to school, getting ideas,?) They drink milk, but they also do not like it. One of them only takes milk, no tea, no porridge. They can add *milo*, or cocoa if they want. We do not ration milk. We eat potatoes and rice when it is available.

> In the evening the kids prefer ugali. We look for theVegetables in the shamba: *kale, cabbage and managu.*
>
> During the day we cook porridge for people to take after coming from work. Then we cook one evening meal. The food doesn't last to the last meal because of the school kids. They have to eat before the rest of the food is ready.

This responsibility is heavier on mothers with infants and small children and women whose spouses or children have special health concerns.

> The kids all take milk. Some of us do not take eggs because they hurt the stomach. Especially my little girl and me. Even if it is in the pancakes. Even when I was growing up I did not eat them. She would vomit every time she eats them
>
> My husband does not eat this because he has diabetes.
> Many men seem to get this disease these days.
> He eats beans, all types. and all types of vegetables a little rice, some *uji.*

In some instances she is forced to cook two 'pots' of food per meal.

> So we always cook two pots, whether it is an occasion or not.

Health needs of specific women were catered for in women's group events too. Some did not eat maize and others did not take sugar in their tea.

With a range of beverages, fruits, or an occasional chicken, women can accommodate a variation of preferences and special needs. The women base this on their observations of and interaction with their family members and not directly drawn from cultural rules of feeding. Such detailed knowledge of particular needs and preferences of family members affirms her place of not just a mother, cook, wife but a woman of this household rather than any other. Thus a woman asserts herself by catering for the needs of her family. She has a special relationship with members of the household, one that obligates her to meet expectations from family members. The children and the men expect food to be ready on their return from school or work. Even when the children help her, the responsibility still remains her own and she is answerable to her family.

> If men helped it would be easier. On T.V, I see boys doing everything in the house and I tell my boys to watch how other people live. But when I have to go somewhere, I have to leave pre-prepared food for them to warm. Sometimes I have

to indicate to them even where there the pots and plates are.

The share for each person has to be identified by portions and sometimes even the plates and cups are personalized. The dish of every member has some food put into it. The father's, the child's, the young man's, these are personalized by both the mother and the others over time." My food is synonymous with my plate of food." If a person is absent for a meal their share is set aside for them in their cup or plate. The plate and cup determine the servings/portion sizes as opposed to the calabash or *mataha* of before. Traditionally, food was placed in the granary on a tray and porridge in a gourd and family members helped themselves as they wished. The concept of 'my plate of food ' is new. Some things have changed now. Food was oriented to activities that the family was involved in a particular season. Children go to school and the father may be away to work. This introduces a regularity in the meal pattern. When these rules are followed, food provision and meals become a symbol of the home and a woman's place in it.

Thus the woman is in a dialectic position. She has freedom to an extent and is controlled at the same time. The dark side of this is that some women appear to occasionally stint themselves in favour of other family members. Because she does not comment/complain, but routinely replenishes supplies, the family members assume that every time they drink or eat she does too. Since no one else but her shares out or monitors supplies, no one realises she goes without. There are items like milk which are not in her jurisdiction, she cannot use them or monitor the supply to family. *Iria ni riene*/The milk is not mine' was a common reply. Because milk is a major source of regular income, milk is monitored by the men and is an occasional source of conflict. There are times when the husband expects a cup of tea anytime he gets home without realising that he measured out milk for domestic use in the morning and sold the rest. There is just no milk in the house and it's not milking time yet. So every day she has to set aside an emergency supply of milk just in case! This extra milk may be drawn from the milk for sale, without the man's knowledge. Even when she wants to entertain, and requires a larger amount of milk to do that, her husband decides how much more milk will be retained.

The women are expected to meet the needs of others, but their own needs are challenged. Men complain of the emergence of the 'two pots' concept, if they are not the reason for that. This has arisen out of specific health needs of the women, following which certain foods are advised. The men assert it is a way of legitimizing women's greed, need for attention and for a special diet at the expense of the rest of the family, citing doctors orders as an excuse. The men even make jokes of such conditions

> Does your wife need/eat a special diet too?
>
> Have you bought two 'pots yet?' You had better!

Some of the men assume the women make false claims about poor health conditions, as a way of getting better food, or doing less work. Others assume the women are forcing them to spend extra money which they otherwise would not spend on food. It is possible that some women take undue advantage of these new developments of course. It seems the women have to resort to outside authority to get their needs not only recognised, but addressed. Even when ill or pregnant, a woman may deny herself prescribed foods because she does not want to draw attention or bring scorn on herself.

Assumptions about nature of commonly held experiences

The following assertions underlie some common practices among the women. Some of these practices involve including as many foods as possible into one pot by mixing foods. Not giving fermented porridge to children was explained by these widely acknowledge facts:

> But for very small children, that was not given because sometimes the porridge got too fermented for them to handle.
>
> Kids did not take fermented porridge. Would you give yours fermented porridge? They tended to vomit if they took that porridge.

Giving a special diet to children also reinforces the previous theme of women's response to special needs of family members.

> The ones (children) who follow each other, the nursing one and the toddler. They can not eat maize. I did not want my babies to eat maize. So I select the maize out of the main meal and add vegetables and potatoes to that and mash for them.
>
> Young kids cannot digest whole maize grains, (they are seen in the stool as whole grains) This determines what one feeds a child and does not. It brings in another a dimension of contrast: what is appropriate for children and what is not. Since babies cannot chew on the coarse grain, then it can not be digested.

Supplementing the diet with fat to aid digestion in small children is a practice they have lost.

> We gave them (children) fat to give them good bodies and to aid with the bowel movement. It digests/grinds(*guthi*a) the bananas they were given.

The last assertion implies caffeine dependence.

> I cannot function without tea. It takes away my headaches. I can do without food but I need my tea.

Relationships among domains

Most themes are not discrete or linear. They are inter-related/nested into a system. The women clearly link all the various aspects of food use and consequent explanations. This is a system built up from years of experience and experimentation. For example, there are relationships among cultural domains that denote kinds of food that were eaten:

> In-laws do not eat maize among/from their in-laws. You can not serve ordinary beans to your in-laws
>
> We ate sweet potatoes, *mukimo,* and porridge.
>
> The juice of the wild palm/mukindu was not only used in famine, but any season when the sun is fierce. The juice/*uthuthi* was regarded as food rather than a drink

There are reasons for eating/not eating foods.

> The fermented porridge does not agree with them. They get headaches and vomit. Even me, I take that porridge I react. Even for me, I can not handle milk unless in tea form. The stomach aches and groan and I just know it is the milk.
>
> Kids did not get the fermented porridge incase they felt bad/unwell. The unfermented porridge was drank hot. The sorghum was from Meru. They did not add maize flour to the flour for making kids porridge until they were older.
>
> The meat from the head was eaten by men. Stomachs were eaten by women. Ears eaten by girls.
>
> Women parents because they are merciful/compassionate shared their share with the kids. The families slaughtered when there was reason for it. This was rare for people who did not have much wealth. Because they did not have the animals.
>
> Banana for feeding children were roasted, chewed and put into a container for feeding the kids. Then goat body fat was added and mixed in. The kids were fed with a finger. They got very fat/healthy.

There are characteristic of foods, some of which were also reasons eating or not eating the foods:

> We mixed all types of grains for porridge. It was very good. The flour for children was ground very fine.
>
> Children were given fat from a drinking horn. They drank about three times a day.
>
> > Very good/clear melted/runny fat. It was mainly for a nursing baby who does not eat much food. They stopped when they started walking, but after that they ate solid fat and/with porridge. They were started off at three months.
>
> No woman could drink that milk because of the colour of blood

Stages/sequence in preparation were described:

> It (flour), is ground to be very smooth.
>
> Porridge was made daily for kids so as not to spoil/ferment.
>
> The bananas were chewed for them (children) by their mothers.
>
> The vegetables were steamed by cooking it on top of the boiling maize and beans. After which it was mashed up with other ingredients.

as were functions of the foods:

> Fat fed to babies helps to digest the bananas they are fed on otherwise constipation results. Their bodies really looked good (*kwagira mwiri).*
>
> To conserve sorghum flour, banana flour was used to make porridge.
>
> Fat and papyrus salt was mixed in for taste
>
> I have to take tea every time. If I don't I get headaches. When I take tea I do not even need food.

The extensive practice of mixing foodstuffs indicates the women understand the complimentary nature of different foodstuffs.

> Vegetables were mixed into and mashed food. Some women ate *matanda* fresh plain vegetables. Children were given this too. It was more to check if the vegetables are cooked enough to mash well than anything else. These were sizable helpings though. The top vegetables had bicarbonate of soda though.
>
> The grains (millets and sorghums) were mixed in equal portions.
>
> The mixing was done using the eyes. One did not bother so much about how it looked one just mixed equal proportions. No grain exceeded the other.

The women understood and could explain why they fed children certain foods. Their confidence in their actions is grounded in experience that offers alternatives. This rational basis for behaviour is being shaken by modern knowledge though. Most of the health advice the women or their family members get offers no alternatives. The advice reflects certain patterns of food use.

> They throw the information at us. We are not sure they understand it themselves. One cannot ask questions because the information is not given in peace. Alternatives are not offered.
>
> He is old and his body has defeated him. They speak to him with anger and he gets afraid.
>
> If he feels bad or hungry, then he eats a fruit. He is afraid of all sweet things.

Introduction of foreign tinned weaning foods for example means the basis for use of the new foods is not sound because the women do not understand what the foods contain and consequently what to expect and how to supplement.

> They (children) took a lot of porridge from different sorghum and millet grain. It kept them very healthy. They drank it on demand. When they stop nursing they tended to take/demand porridge more frequently. Their siblings took care of them. It is just like the 'girls' you people employ these days who look after your children.

The criteria behind most introduced foods changes with new shifts in the market, advertisement and research findings too. The specific instructions that go with most introduced foods limits variation of the food as desired or as circumstances dictate. This is related to scarcity of certain foods.

> What we lack is beans. To leave home and search for them is difficult. Even when the clinic asks us to buy, it is difficult.

Health and nutrition advice often gives no options/alternatives. This confusion explains the ease with which they disregard advice given especially when the advise disregards their cultural background.

> You can not tell a true Kikuyu to eat *managu*/amaranthus'

> The children do not choose what to eat because they have no alternatives

Quantities/Specifics

With regard to quantities consumed and individual entitlements the women claim to 'just know' what the family members need. In terms of how much to cook they 'measure with their eyes'.

> As regard the quantities of grain it was measured with a *kondo* a small measure, or a calabash measure that the mother already knows about.

> There is a calabash that measured, it look/acted like a spoon but is not a spoon.

> Only one who is close to the mother would know the way the mother does the measurement. This measure was specific to the house/home. It is the mother who knows.

Other terms used that were indicative of measurement included:

> measure with their eyes
> every shepherd knows when the sheep are full,
> Use large measures two kilo tin, *debe,*
> 15 cup
> gallon=aluminum can
> bottle of milk, plateful, calabash, *kiondo.*

This is a contrast with modern/western way of handling food. The western approach gives specific amounts and instructions which allows no room to manoeuvre and be creative and the end product is a standardized one. Any variations unless carefully monitored leads to disappointing results with the foods. Since the women have to deal with bulk foodstuffs, the standard measures mean women can comfortably manoeuvre around the food to accommodate for varied attributes of the same food without interfering with the end product.

Most foods consumed are mixed food dishes. The women recognize the teamwork of nutrients and tastes as important. However, proportion of quantities of foods mixed varies when food is in limited quantity, to stretch some foods and conserve others. For instance amount of beans to maize may be reduced.

> In a month we use three tins of maize and 3 quarter tin beans. I mix them all at once so I just fetch out/draw out what I need to use for a particular meal.
>
> Less milk and sugar is added to tea.
>
> I cook tea once and keep heating it to save money. I do not have cows I buy two 'bottles of milk per day.

Since potatoes are in plenty, a large quantity of potatoes tends to be added to githeri, mukimo or mixed rice when extra bulk is required. This is not to say the women have no standard to work to. Traditionally there were desirable qualities and standards of each food in spite of the varied proportion, the end product did not deviate significantly from the norm. This standard was instilled into the younger women by the older ones.

> It is not uncommon to hear a mother ask the daughter 'why did you cook this amount, it will not be enough'.

Use of specific containers for specific foods is quite common. There is the pot for tea, for ugali, for milk and so on. This raises the issue of having to ascertain adequacy if someone else but the mother is cooking. The effect of stretching resources as a coping strategy and the disappearance of some of the foods is visible. At present, the foods are getting whiter and whiter due to reduction of legumes and vegetables. A larger amount of maize flour is added to mixed grain porridge than was previously desirable. This increases the quantity but may decrease the quality considerably. Some items are even left out from the traditional product. For example, no fat is mixed into ugali. When the idea is to extend resources, rules are broken. These un monitored variations in proportions may affect planning for specific foodstuffs, when one has learned to do with less. Stretching of resources is a coping strategy and not a typical practice. This is crucial because when measures/proportions vary from household to household it is hard to determine adequacy of the diet in such a community without taking the variations into account.

> The food was put into appropriate containers. One for the man, another for the kid etc. The kids did share the same dish, but men and women do not.

Woman/family specific measures may alter/affect adequacy even if a similar food is consumed/reported to be consumed by all the families. This theme also shows an evolution from using one's intuition/eyes to measure something, or equating something to something else to metric measures of metal tins /*debes*, kilos and bottles of liquid.

> He went to Maasai land and brought meat and fat as big as my hand.
> It is for example like the two kilo measure that we use today.

Certain processes such as fermentation of porridge, and souring of milk on the other hand have a specified number of days for an optimal and safe product.

> *Githambio*/malted grain would keep for more than a month, and porridge from it could be made in ten minutes
>
> Grains from sorghum were soaked for 4-5 days until the sprouts were about one inch long
>
> Men took sour milk mixed with fresh blood. It was then ripened for four days, whisked to homogenize and then drank by men and young men. NO woman would like it. It looks so bad because of the bloody/reddish look.
>
> Smoke/soot from a particular tree was put into a gourd for taste.

This is important in terms of quality, taste and texture of the products. Specific rules apply to perishable foods. Milk processing sequentially moves from fresh to sour to ghee or butter fat/*ngorono*. Nothing went to waste. Apart from an optimum product, these foods can decompose into harmful toxins. Use of the soot/smoke with milk controls growth of harmful bacteria in the milk. Papyrus salt added to fermented porridge has the same effect.

However, with the intrusion of modern measures, the women are operating in two domains. They have to buy or sell food in terms of kilos and gallons, or litres but at home use their intuition. Milk is measured according to size of containers/ *sufuria* and number of cups. They just know! This implies repeated actions, and experimentation to reach such a degree of certainty. To tell how many kilos of flour will be needed for a week when the quantity of porridge to cook depends on the number of people present, and is measured using the eyes, requires ingenuity. This also does not tell how thin/thick the porridge was. The same argument applies to the proportion of maize to beans needed to cook for a meal, the amount of vegetables to ugali. But the women do not go wrong. This knowledge is specific to the mother or one who is very close to her. It is also said that every household has their own measure, have their own 'way of doing it'. This evolution means the women have learned to deal with the two systems to fulfil their ascribed role of ensuring adequacy of food intake. The two systems complement each other and provide an alternative, one that can be used in different settings appropriately.

Them and Us! A Comparison between present practice and others.

Apart from family/local influences in terms of food use some of the women had experienced or observed other forms and ways of using food. This brings in the concept of home food versus other, our food versus food eaten by others and the concept of time in relation to eating food. School food, or food eaten by *'mzungu'* is perceived as having been better than home food while some vegetables and the fish from some neighbouring tribes are despised. It is hard to tell whether it is specifically the foods or the people of those tribes that were despised. The Kikuyu have a deep scorn for the fishermen and their ways: uncircumcised men among the Luos and Turkana. Herdsmen did not know how to 'farm'. A comparison of distinctive feature of different foods does serve as significant stimuli in the change/retention of food habits. Contact with a different system will either reinforce existing practices by increasing appreciation of what the women have, or trigger change. The strength of the stimuli determines what will be changed and what remains. How much of something changes? Is it a part or whole?

From observation the quality of school food has really deteriorated in terms of quality and methods of preparation since the women left school. There is very little variety, it not enough in quantity and consequently the students are 'always hungry'. Looking at the nature of school food currently, one would wonder what the women may have found so attractive, even better about school food.

> At the boarding school we ate githeri and ugali and rice. We also ate meat about twice a week. We raised pigs and the nuns sometimes made sausages for us. The *githeri* had vegetables added to them especially some pumpkin like vegetables. We ate very well. We grew most of the food. I got to know sausages then. We ate eggs when meat was not given. *Uji* was made in a *mwambu*/drum. The *uji h*ad nothing added to it.
>
> We had *soupro* in school and macaroni too.
>
> At home it was different. We thought school food was better and preferred it. At

> home we just ate the *mukimo* and fried *githeri*. There was not much to drink except the uji. You see in school we drunk a lot of tea at tea time. At ten o'clock. But at home we did not bother with beverages. This was tea with milk. The tea was sugar less. The nuns really love themselves.
>
> At home we had beans but we mainly ate mukimo that had vegetables. We ate arrow root and sweet potatoes. We had lots of banana and fruits in Nyeri.

School food, according to the women represented a form of sophistication, acquiring the 'Mzungu' clean habits. It introduced a value to some foods and the concept of a set meal time.

> In school the fruit was set by your plate
>
> Rice was eaten once a week on Sunday after church.

They sat at a table. They had fruits with the meal. They observed specific meal times. In the women's homes, they serve food from the kitchen and most food is eaten in the kitchen and in haste. For many there is no separate dining room, tables and cutlery to eat with. Men may eat in the living room. Women's busy schedules leave no room and time for elaboration. There is no time to sit at table in peace and dine leisurely. What the women do not realize is that such practice in a family set up would increase demands on their time and sitting at the table, even with family members can be a stressful experience. Apparent denial of certain foods, sugar, eggs and meat, in school or as squatters, made the foods more valuable.

> Sometimes we had our own sugar which we added to the porridge by our selves. Nothing was added to flour it was just plain flour.

Economists claim that scarcity renders things more valuable (Engel, 1950). Among the women this principle applies to chapatti, milk, bread and *milo* and cocoa. The women do not perceive their meals to be oriented to time but they obviously are.

> I do not teach my children to eat by time
>
> No we have no set time for eating. Children eat when they want to

Meal times are marked by the time children leave from/for school, the time basis allocated to farm labour and the time for milking cows etc. The meals are oriented to these fixed activities. All these events are regularly oriented to a specific time. This has introduced regularity to the meals. They have radios and watches that warn them of time to start or end activities. What the women mean is that it does not matter if they ate earlier or later than the day before. They do not follow 'mzungu time/clock time,' but their own, inner time. Meals rotate around activities and not vice-versa. The spacing of the meals for the children may affect overall adequacy of the meal consumed.

> For the little ones you know you have already given them porridge and bananas to keep them calm as you cook.

Some older women are nostalgic about traditional foodstuffs, but how do they prefer one thing and get used to eating another? Some on the other hand, do not think Nyeri is so great after all, with the major social and economic changes, one old woman has this to say,

> I cannot go back there for anything. There is no food, no milk, no potatoes. All my age mates are so thin and bent. What would I eat?

Apparently the value of food is determined by how where and how food is served. Women who occasionally visited their children in towns said,

> They eat like 'mzungu'/white men, everything is put on the table. All kinds of food.

while others commented with disapproval that,

> The vegetables are not cooked/undercooked?. I can not eat that. They always have to recook my share.
>
> They cook food for one meal only. That is meanness/'*ukari!*. Nothing is left over.

If a visitor walked in they would have nothing to eat.

Health conditions linked to food

Most women acknowledge that some people at one point or other have less than perfect health. In the downward progression from an optimal diet to an obvious deficiency, there is an area which people do not feel well and do not function well (De bryne, 1985). Not having enough to eat is recognised as an unsatisfactory condition which leads to poor physiological states, such as lethargy (*kunogerera)*, thinness (*kuhinja, mahinja),* to look like a dry stick and eventually weakness (*kwaga hinya*) which implies inability to perform productive work. Wholeness (*kwagira mwiri)* and vitality can be restored by health foods after which one becomes strong (kugia hinya) and productive. Skin lesions (*ithemithu)* are linked to the lean season *(themith*u) when green food is scarce. This however is strongly attributed to a 'bad eye' because of it's sudden appearance and disappearance without warning. The evil eye is a superstitious belief, an evil spell supposedly casted on others by evil women. It disappears as fast as it appears. Kwashiorkor or 'gall bladder disease' was mentioned but the condition is not prevalent. In terms of children's growth, stunting (*kuhoma)* was frequently referred to by the women.

The above description indicates that most people would fall in the in between areas, preclinical stages of deficiency, which is temporary and can be reversed by food. Most obvious deficiencies are rare. It is possible that a mild deficiency may be masked by the consumption of tea which 'takes away the headaches, and keeps them from feeling hungry'. The tea is usually heavily sugared and has milk. Messer (1986) writes of the sudden rush of energy people experience after consuming heavily sugared beverages, and the stimulating effects of caffeine in tea. However he talks of appetite stimulation rather than the dulling as is apparent in the case of the women. This coupled with the fact that the tannins in tea affect the absorption of vitamin C and iron has a great implication for the women's health (FAO, 1990).

Loss of appetite as a signal to poor health however is quickly picked up with regard to children. For a child who cannot talk this is very crucial. The popular saying *'Mwana mwega_no nda',* translated as a good/healthy child is one that feeds well'/ confirms that. Modern emphasis on clinical signs of deficiency that ignores intermediate stages of diagnosis masks mild deficiencies.Unless carefully monitored, warning signs of slight deficiency, may be ignored as most women will tend to look out for the obvious clinical signs like they see on hospital charts. Persistent threats and warning by nurses at the post natal clinics are an issue. The post natal record card is now mandatory for school enrolment.

The psychological impact of an inadequate food supply/diet on health of the women and the family was not clearly articulated by the women but they give explicit reference to worrying about the persistent drought, fatigue, and a general feeling of inadequacy about not being able to eat what they perceive as healthy. Some women consistently apologised for the food they offered, asserting that in better days they are able to eat well. In times of leanness they "forget themselves " so that there was enough food to go round.

> During other times, I would have enough, but during hunger, I would scrape the pot until I do not even know what I am serving out. Whatever is left on the calabash, is what I go to bed on. Other times there is food in store all the time.

It was interesting to note that traditionally men are expected to and did take responsibility of intervening in an undesirable health state, given the constant blame on them as barriers to optimal nutrition. What has changed ?

> If he saw his wife without strength/health then he slaughtered a goat and make soup. That was the doctor of long ago. He looked for the herbs, no woman knows the herbs! The man made the soup and shared out the meat and even cooked it. If he uses her kitchen, she may not touch it. Until he has shared it out. One was not allowed to put her hands into it.

By implication, men were supposed to be perceptive enough to detect changes and act accordingly. This role has been taken over by health officials and they accomplish it by issuing threats to the women. Fear, then becomes a reason for following a dietary regimen. Soup, porridge, meat, *njahi,* fruits and more recently eggs, cocoa and *lucozade* and milk feature prominently among foods which are associated with optimal health and are prescribed to relieve the undesirable conditions. In fact, poor health is attributed to non-consumption of these food. These foods appear to be either protein rich foods, fruits or health drinks/tonics. There is more emphasis on these foods by the health workers and advertisement than on a complete, balanced diet. The messages are further reinforced by advertisements for foods that target both mothers and children. Supplementary foods such as berries, locusts and termites have been ignored. These foods contributed important supplements in the diet. On the other hand, foods restricted on health grounds are sugar, salt, tea, fat, very coarse grain and sometimes sifted meal. They are told to avoid the foods or else they have themselves to blame in the event of death. These food items are omitted from the 'other' pot. Sugar is associated with diabetes, 'sugar disease'. Incidentally all these foods were introduced and not part of the traditional diet. Dietary intervention usually followed a disease condition, confinement, or a prolonged period of hard labour. Traditionally men went on a retreat in camp. The men consumed a special diet. This event was often referred to by the women as such,

> *Makari?* That is the one thing that reminds me of prohibition. Girls and women did not taste that meat. They (men) wanted to recondition their bodies/rejuvenate/put back life into their bodies. Women did not go near them. They stayed in the camp, and did not come back home. They only ate boiled maize. They said that beans and potatoes will not go well with the soup they took. They came out of there looking like pigs. That was the lean season before the foods mature. They pooled their animals, each man contributed a bull.
>
> *ikari?* They like to hide there, to eat in peace without being disturbed by children and women. When I took *muthere* or uji then I was given back some meat to take back home. They went about three times a year.

Sexual abstinence was enforced at such times for no man was allowed to sleep outside the camp, nor could any woman or girls enter the cave or shelter.

Body image features distinctly as a sign of good health.

> When they came out they could not feel cold or even wear clothes. Their bodies had improved/become good. When you see them they have *'afya'* and are fat. Then they come out, We would cover our mouth in wonder because their bodies are so smooth and glowy! As if they had been dipped in fat. Even young men went. No girls and women. They knew how to take good care of themselves.

Being fulsome and in the case of children being bigger is considered not only a sign of good health or beauty but also a sign of good living. This motivated planning to ensure constant and sustainable supplies of 'essential ' foodstuffs.

> We got/looked very good because of the fat. We were different from the others because we ate more meat from the raids. The supplies lasted until the next raid. We really ate well. I used to live very well.

This is an assertion that good nutrition is not the only key to health, it is only one of the keys. It has to be accompanied by freedom from anxiety. Bigness is distinguished from fatness/obesity and in men it reflects power. Bigness, connotes a good upright posture/*kurungara*, absence of rickets, bowlegs or bone malformation. N*g'aragu ya ngoro* translated as emotional hunger or stress is identified as a source of poor body image even in the midst of plenty.

Food as an event

Lalonde (1993), states that a meal is a kind of prism that channels various messages, intentions concerns and emotions, all of which add to the rich contextuality of the meal situation. Food has so far been objectified in order to discern the structure of ***Irio***/ meal. That way it has been perceived as a sum of parts. Secondly it has been treated as a purposive action, one that intends to achieve an intended effect of relieving hunger and sustaining health as well as creating wealth. The biological role of food looks at food as fuel by which the body operates and regenerates. The women also perceive food as a social event that creates meaning to them. This distinguishes food as an object rather than food as an event. Food has a bio-social role.

Food plays a big role in everyday life and there is a relationship between it and the social realities of the women. This salient relationship is hard to explain. Various gastronomic episodes in casual visits, group meetings and births say a great deal about that.

'Food -what is chosen from possibilities available, how it is eaten, with whom and when and how much time is allotted to cooking and eating is one of the means by which society creates itself and acts out it's fantasies' (Visser, 1986 p. 71).

The fact that food is treated as a code and messages precoded in the food categories form the boundary basis of a series of social events (Douglas, 1975, p. 259) is also true among the women of Nyandarwa. The types of food eaten, and reasons given for their consumption and their characteristics are related to the events when the foods are eaten. Even foods consumed daily are esteemed. They are valued enough to be eaten continually because they have sustained the population over time. One way by which the meanings of food are conveyed is by repetitive use of a food in a particular circumstance or statements about people conforming or not conforming to it (Pollock, 1992, p. 6).

Meaning is anchored in repeated practices and experiences within a family. On the weekend, the father comes home and brings meat with him. During school holidays the elder sister can make chapatti for the whole family. Every morning before school tea is consumed. Occasionally there is bread or some left over ugali to go with it. A drop in visitor from the neighbourhood is offered a cup of tea. The cup of tea tells her she is welcome. The message passed by denial of the tea is well understood. Tea offered can create or support relationships. Butter is reserved for 'special' visitors and people in esteemed positions. It is Christmas and the father slaughters an animal for his visitors. He roasts the meat and even cooks the soup. When an aunt or grandmother visits from Nyeri, she brings in arrowroots, banana, and sweet potatoes. When a mother goes to the market she brings back a loaf of bread or ripe bananas. No woman walks into another woman's house 'empty handed'. They must carry some food item with them and in return the host places some food item into the visitors basket. When I go home I take sugar, cooking fat, and health drinks to my mother. She in turn packs food for me to take to the city, enough to share with my friends. This generosity and sharing emphasizes an individual as part of a group and not an individual giving to others. Repetitive practices bring in certain meanings that are bound to memories of these events.

What is consumed daily must be easily available, acceptable, fast to prepare and filling. Its consumption can be sustained comfortably. This hardly changes. It is routinised.

> I do not change much from *githeri* to *ugali*. For lunch if it is not *mukimo* then I fry some kale and potatoes but *githeri* must be there so that they can feel like they have eaten. The *ugali* is eaten with milk.
>
> We eat *githeri* and *ugali* almost at same proportion, then *chapatti*. In the evening we are more flexible because we do not have to take care of the labourers. I cook all the meals, but my girls help with little preparation tasks like peeling etc.
>
> Lunch I will eat the same then ugali in the evening sometimes rice but it is basically mukimo and ugali.

The choice is between *ugali* and *mukimo*. The variety in traditional diet was greater due to the size of the family and the sharing of activities of food preparation.

> *Njahi* was mainly given to men. They sometimes demanded for them. They also ate arrowroots. He could be served one item, but demand a different one.
>
> *Githeri* from sorghum was a favorite with girls and woman.
>
> Even if the food is readily available, the time available for preparation and consumption of food becomes a crucial factor.
>
> They drink plain tea before school, refuse to eat lunch. Sometimes some left over ugali, or pancakes; other wise, it is tea only then they ran off to school.
>
> I cook *githeri* to last for two days.
>
> I cook food to last two to three days

If *ugali*, rice or *gitoero*, is to be cooked, someone has to keep an eye on it. The cook has to decide what to cook first, the vegetables or the *ugali*, or is the *ugali* to be consumed with milk? If on the other hand, she has an improved stove, she can cook both the ugali and vegetables simultaneously. She then needs two separate pots to do that.

In the case of githeri, the cook is free to leave the preparation and go to the garden to pick vegetables, draw water, or prepare potatoes while the food cooks. She could even wash clothes or tend to the animals. She does not need two separate pots. Cooking keeps the women consistently in the home and the issue of time limits the experimentation and elaboration of the meals. She keeps them simple and manageable. In the evening and weekends children can watch over food or fetch and prepare the vegetables for her. There are no labourers to cater to and preferences of the specific family members can be catered for.

> We eat githeri, ugali or rice. Children prefer meat fried on it's own without adding anything.
>
> In week, we eat meat two times. When the butcher slaughters. We buy a bout a half kilo. We eat it in one meal. When we have money, we buy often. They slaughter daily.
>
> The variable, that impacts most on food choice within the food event during different seasons is the agricultural activity of a zone. This depends on the variety of crops grown and the rainfall pattern.
>
> When it dries, I still have sukuma. I buy very little. I carried amaranthus from the group garden and cooked it for *ugali*.
>
> That is why I did not plant them. Now that the rains are here I have planted spinach, carrots kale, cabbage and all. I still have peas there. We eat then green. Not having water means I cannot plant carrots, tomatoes and fruits which are raised by water, and I can not plant them as a result.

Vegetables and fruits are consumed seasonally, according to which fruit or vegetable is in season. This variation affects fruits more than vegetables because the later can be watered and are short term plants.

> Oranges? We buy them, when they are in the market. My children really love avocado. They can really eat them. I buy fruits once a week. I go the market every

> week anyway. I have five kids, a five shilling pawpaw is enough for them. I have none in the garden now.
>
> The oranges are the cheapest in the market now, so I tend to buy them now. Sometimes I ignore the price because the kids want them.
>
> We grow every thing including the tomato tree. We buy avocado at the market.

Vegetables can be purchased in discrete amounts as required because they are cheaper and more varieties are available. Some are perennial.

> When it dries, I still have *sukuma*. I buy very little. I carried amaranthus from the group garden and cooked it for *ugali*.
>
> That is why I did not plant them. Now that the rains are here I have planted spinach, carrots kale, cabbage and all. I still have peas there. We eat then green. Not having water means I can not plant carrots, tomatoes and fruits which are raised by water, and I can not plant them as a result.

The extensive preference and use of cabbage in the dry season is related to the bulk/yield of cooked product and because it keeps fresh for a relatively longer time than the green leafy vegetables. However makes the food appear very *gicheru*/white an undesirable characteristic in Kikuyu foods. The fruits have a fixed ripening time. Fortunately there is a fruit in season almost all the time.

> We all eat the same thing. Fruits are eaten by all. We always have a fruit in season at a time. The man does not like the fruits other than for oranges. He does not like the tomato tree but I do not know why.

Less fruit is purchased from the market, but fruit that is purchased is mostly by families from the upper zone to cater for children's preferences/demands or for health reasons (when prescribed by a doctor). The issue of seasons impacts more on the semi- arid zone because they have a marked dry season.

> This season we have no potato. If only we had water, we could feed millions of people. We have to irrigate oranges too.

Because of the recent drought, the women have had to buy every vegetable used. This means they cannot save or have assets to transform resources into cash.

> We always have vegetables. During the dry season we buy them. From January to March and sometimes April is the crucial time. But potatoes we do not really miss. Our neighbours irrigate and they bring them down to us. I go to market rarely.
>
> Having to buy all the foods is very expensive. My husband is butcher. We get half 'a kilo every two days.
>
> During the drought all the foods including an onion is bought.
>
> During the drought, we have to buy some beans.

This problem is much worse for the younger women with young children at home and with school children. This group is becoming increasingly vulnerable to social and economic changes. If they don't have a fruit in season, they forgo them. Chance determines their social position and in a society where poverty is not only a stigma, but is attributed to laziness, this is not an easy position for the women.

> This season there was no harvest because the plants were hit by frost.
>
> When the rains fall well, then we have enough to eat. We have pumpkins from which we eat the leaves and the fruit.
>
> When the rains are generous, we buy very little just for flour before the last crop dries. We grow pumpkins. They produce both vegetables and the fruits.
>
> When we have rain we have potatoes too.

The only solution they see to this situation is a constant and continuous source of water.

> If we got water we would be helped quite much. For me, if I would have a tank, I would be able to tap water, and be able to grow vegetables.

Occasionally, different foods are served to break the monotony. There is more variation in this category than the formerly because it is determined by social differences and preferences. On Sundays, when visitors come or during school holiday, a different staple is eaten.

> I buy wheat flour sometimes.

It may be the same staple, but the form of elaboration or the accompaniment the type of bean, the addition of meat differs to mark the difference. The same food may be elaborated by frying, adding side dishes, changing types of beans. In weddings a range of dishes are served.

> Kikuyu *njugu, soda* and meat was eaten at weddings at whatever cost.

In case of illness, a different variation of food dishes is served, without sugar, salt, fat, maize, and lighter food as appropriate. Personal attributes of the women: age, zone, social status, number of people to cater for, and the event are significant factors in the decision process.

> The only thing we cannot find and do not eat often are those Kikuyu foods because they are not available here and if one wants them they have to go to a market and they are expensive.

CHAPTER FIVE

UNIVERSAL THEMES

Introduction

When the women talk of food in terms of *ugali, mukimo, githeri,* it appears as an incomplete description. What is included in it is not clear to outsiders. It is predestined/determined by the main form of the staple. They are all mixed food dishes based on maize as staple. It is understood among them that mentioning *ugali* means that it is accompanied by some other food. One needs to be a member of the culture to know that. With the term *ugali* sometimes, the accompaniment of milk, of cabbage, of meat, *gitoero* is included. The issue of what to cook on a daily basis is pre-attentive. It has been learnt and one does not have to pay attention to it. It is like a master plan. Most of the information from the women was based on episodes and organised around personal experiences, organised around the time lines of their lives, and built on over time. Decision making is based on experience. When an occasion arises or new food is introduced, these episodic scripts are used to compare distinctive features of the food. Their culture is evolving and dynamic. That they welcome change and not preservation is clearly stated by the fact that they did not easily adopt the IFPP. They are also members of women's groups which are clearly known to catalyze change. They are experimenting actively with new and local foods, keeping some aspect of the Kikuyu tradition alive and changing others.

Most food is taken directly from the environment. This limits consumption as any change in the environment means a corresponding change in the diet. There is a decrease in the variety of food consumed over time in the region. 'Other' foods are decreasing in use and frequency because of the cost and frequent shortages. The kinds of included terms within domains of food are changing too. The economic factor is very strong in limiting food choices. As families derive better incomes, as the people go to school and get formal employment, they start changing their food habits. Baked foods such as bread are introduced. Some of the local roots, squashes, tubers, vegetables are replaced. In the case of Nyandarwa, some foods have been/ were replaced/displaced from the diet by the effects of migration. Environmental and technical changes have given rise to marked changes in the diet. They could not grow most traditional foods in the district. They had to substitute certain foods or change the foods all together. Some of the plants that grow in Nyandarwa are different from those they grew elsewhere. There is a marked shift from roots to cereals and from whole cereals to milled grain, i.e from whole foods to part foods. This forces changes on even the staple and makes new products easy to adopt.

In the Kikuyu society, a meal is not a meal if a staple food is not eaten. Yet in spite of the dynamic nature of food habits, they can also resist change. Staple foods are difficult to change because they are embedded in the cultural values of a society due in part to their emotional importance. For both the rich and the poor, the staple maize, is served in a variety of ways as a whole grain, flour, grits, green boiled, green roasted. Maize grits were formally a substitute for rice, and with the emergence of *ugali*, are now hardly even consumed. None of the women had consumed them in the last five years. The decrease of beans and the rising cost of beans at the same time the women are trying to keep the maize culture alive, explains the adoption of ugali.

The physiological perceptions of a food such as satiety plays a big role. Maize meal is a concentrated source of energy. In terms of satiety the order is as follows: *ugali* = *mukimo* >arrowroots=*githeri* > yams > sweet potato > rice > banana > potato. These perceptions affect how much of a particular staple is eaten and when. The preferred consumption of ugali over *githeri* conforms to the expectations of satiety, which saves the time involved in converting *githeri* to *mukimo*. *Ugali,* a derivative of maize and a relatively new food, can be prepared with less work. Despite it's bland flavour, it has been accepted and adopted quite rapidly. This solves the problem of the need to have beans and potatoes in the meal. The high cost of beans is felt because beans do not do well in the region and have to be bought or substituted for by peas or *noe*. The banana has been replaced by the irish potato.

The lower zone seems to have adopted ugali more readily than the upper zone. This, I think, is related to their colonial experience as squatters on the 'white highlands.' As part of their wages, they were handed out rations of maize meal which they had produced for the mzungu on weekly basis. At the same time, they were given the whey leftover after cream and butter fat had been skimmed off. That way, they learned to eat ugali and milk. As squatters, they could not grow their own food or herd animals and were dependent on their employer for supplies. The squatter villages were comprised of other tribes too, mainly the Dorobos and Turkana whose diet was mainly milk and ugali. The interaction with them reinforced the change.

The presence of maize mills in close vicinity has made the transition from the use of whole grain to meal faster. Traditionally the grains were ground by hand on a stone. It was difficult to grind grain in bulk by hand and the meal was restricted to use in porridge. It is difficult to tell whether ugali would have rated as high if the technological constraint was absent. The choice of ugali as a meal also takes care of the specific needs of all family members. Children and the elderly can comfortably eat it, and therefore no extra provision need be made for them. Widespread consumption of ugali has evolved as a coping strategy. The question is, how long can it be sustained?

Milk is becoming a prominent part of the diet as an accompaniment to ugali when no vegetables or meat is available and for use in tea. However, milk production decreases during drought due to reduced water supply and pasture. Milk consumption is related to water supply, pasture and is therefore seasonal. During the dry season, producer prices for milk are higher by two Kenyan shillings per litre. This creates a dilemma as to whether to sell or consume the milk. Withholding milk from the family in order to make good sales is more prevalent in the semi-arid zone. It can be related to their colonial experience of denial of milk by whites. They were given the whey, while the colonialist consumed the cream. They looked after the cows, but were denied access to the milk the cows produced. Milk as a source of income has become a status symbol. It is also now the main source of regular income in the district. The issue of milk is a sensitive one in many families. Many do not like to admit that they do not consume enough because they are diverting it in order to make bigger sales.

Constraints such as time, and to a lesser extent fuel, have a big role to play in the change. Fuel becomes a constraint when time has to be spent collecting it. Otherwise wood fuel was abundant. In traditional families, social roles included activities performed by all the members. Now the social structure has changed. Children are in school, men are away and all these roles have fallen on the woman. Water is a greater constraint in the lower zone because domestic animals and some crops are dependent on it. These women do not have tanks to harvest rain water and they are becoming more and more dependent on the market for food supplies due to the drought {See table 4}.

In addition to these forces, eating patterns also seem to be influenced by changing community values such as education and urbanization. Some investigators report that a high value is placed on newness, variety, change, and convenience whereas in traditional societies, sameness is valued and monopoly of diet is "good and sought" (Sanjur, 1982). Roads increase access to a region. The roads in Nyandarwa keep people in more than they take them out; they are unreliable and as result public transport vehicles avoid them. The women say that there were more buses and small vehicles ten to twenty years ago than there are now.

The women are segregated from the outside world even further by the high transportation cost. The cost to and from the market is sixty Kenyan shilling/one Canadian dollar. They also have to pay extra for the transport of loads of food. From observation, it appears that their contact with the outside is minimal because the women hardly move out of the district. They experience this removal from the rest of the world as a loss.

> I move out of here maybe once a year, apart from going to church of course.
>
> We would like to travel a lot because we have children in schools outside the district. But money is an issue. Work also ties us down. We cannot leave all these activities to labourers. You see, we shop rarely, and we have few needs. There is no money to spend on little things. Now it is more difficult to travel. I travelled more often before. Now the man goes to the bank.

They are within a radius of thirty kilometres to the local market, so they rely on the convenience store in the locality for the few provisions they need. The distance to market indicates the degree of self sufficiency they have enjoyed in the past. They needed the market to dispose of their produce and not to buy from it. The local market is held twice a week and contains more dry grains and legumes than fresh foodstuffs. The limited supply is supposed to cater to those who cannot grow their own: such as the teachers and civil servants living in the neighbourhood. In terms of purchased food, the corner store dictates what the women buy. Only one type of cooking fat, wheat flour and tea leaves are sold at the store.

Most information or change is brought in by educated female children living elsewhere or through programs organized through the women's groups. The presence of the local butchery has not necessarily increased meat consumption as the men still take care of meat. They decide when and what to buy and because of their superior knowledge of meat selection, do most of the purchases. The butchery has provided access to smaller affordable pieces of meat which takes away the idea of having to kill a whole animal in order to eat meat. Now that families are smaller, one animal can be shared out by a whole village. However this has not increased the consumption of meat.

Change

The diet of people in Nyandarwa today is not the same as the traditional diet of the Kikuyu (Leakey, 1903). When a person is identified as belonging to a specific ethnic group, it implies a sharing of criteria for evaluation (Oyhus, 1993, p. 17). Ethnic identity thus implies constraint on individual behaviour. Traditional ethnic boundaries have a territorial counterpart. In Nyandarwa, it is the culture, constrained by limits of the socio-economic status and environment that determine what food is eaten, produced and by whom, not the ethnic boundary.

> Originally I used amaranthus, but now I use cabbage. I fry the food. My family does not eat githeri much because I have not familiarised them with it. If they eat it sometimes I see as if they are not full, so I follow it up with some *ugali*. 'Every shepherd knows when it's sheep are full'.

> There was no chicken. Who would graze a butterfly among the goats?

> No one raised them (chickens) together with goats. They were called birds. Things keep getting clearer and clearer until now nothing is wrong per-se.

Most social life is organised to accommodate natural fluctuation and the process of migration. The women are already operating in a new paradigm in which historical change has introduced certain elements that either compliment, conflict or contradict the traditional practices. The women clearly stated practices that are not traditional such as the following:

> There was no sugar before.
>
> People did not take water unless they had no porridge.
>
> There were no fruits, only berries. We did not take tea then.
>
> There was no tea.
>
> There was no tea. That we took when we became women. We did not take milk. It was not good for kids. I first drank milk when I got kids. It was fresh milk. I put it in uji.
>
> Sugar, tea, and cooking fat came the other day. None of the things '*mzungu*' brought were there before.

Satisfactory practices /foods have been displaced,

> We boiled tubers. Then maize and beans were boiled, mashed and kept in the granary. The food was eaten from there. No food was reheated. Bananas were also eaten. The arrowroots, sweet potatoes, ripe banana and yams and cassava and sugar cane were eaten. *Mukimo* was the most common. We had no cows, so we drank porridge. Cold porridge was mainly *mukio*. All homes are different.
>
> Sorghum was not bad. It gave kid *'afya'*, together with the fat. When sprouted it was even better. You could see it in the children's health. Now we add milk to kids food.

> I can not take milk now. I did not learn to take it.
>
> There was another potato. It was better. It tasted better, it did not form lumps when it was being mashed. It is no longer there now, it got lost/chased by these new ones.
>
> Kay apple, *ngambura*, berries that look like a fences and grew in the wild. These were mainly eaten by kids. They were gathered not harvested. Kids gave out fruits to other children/siblings. Gooseberries.
>
> Green grams were boiled then mashed with mutton fat and called n*gina ya thuu*/green gram *ugali.*

Practices have come in to complement existing ones or as a result of social change.

> Oranges came the other day. When I came over, I found them in the 'mzungu' farm.
>
> Fruits were brought in. We used to eat wild berries. We ate them a lot. They were just like the one of the *'mzungu'*. We all ate them because God had planted them. There was another fruit *'metuya'*. My grandmother sold them. These fruits were in the west.
>
> Flour came before *njenga* It is a good rice. Njenga came first then flour. They were not eaten much because the mills came and flour could be ground.
>
> We ate *njenga* at home. We prepared gitoero with vegetables and onions and potatoes. The njenga was prepared like rice. Just boiling in water. It was difficult to get fat to make the *gitoero.*
>
> The mills did not grind njenga every day so we had to time the days they did.
>
> There was no chicken they came the other day. The older men don't eat chicken. They call them hawks that fly over us. Even the antelopes.

The women see change as inevitable. Some foods have disappeared and others have come in their place. The borders around food are changing. However, some of the changes put the women in a dilemma.

> The older people and small children have more problems, they cannot eat maize

The roles of the women have multiplied. Not only do they need to produce enough food, prepare it, they also have to select what to buy, and to be able to market their produce.

> I spend about 500 shillings on food per day and the basket cannot get full.

The women also feel that school is not giving their daughters a practical education. It is based on 'book knowledge', and therefore has to be grounded in practice within the home.

> I teach my daughter to cook by actions because in school she learns from books, but at home it is through experience. Am teaching her to be independent.

That is the *githomo*/education for the women from the house.

Food as a commodity

Food has become a commodity. It can be exchanged for cash and vice-versa. It has become an object whose exchange creates distance and differentiation (Counihan, 1993). This is negative reciprocity whereby individuals are placed in antagonistic positions toward each other. Some have access and control over food, others do not. Food needs are not adequately met by subsistence production any more. Food production is no longer an assurance of adequacy in terms of quality and quantity. The land base has decreased. Family land is marked by boundaries beyond which one cannot farm. Some of the younger women do not own land. They live on family land and the fathers-in-law dictate to them where and how much land to farm on.

Most of the foods grown are perishable and seasonal. The roads are poor and producer prices bad. The scarcity is aggravated by the fact that they cannot take the surplus to market nor can they bring in what they lack in bulk and at reasonable prices. The prices of foods (fruits, beans) brought in cost as much as they would cost in towns. Traders/poor landless people, as the women perceive them, are a prominent feature of the food system now. An alternative to farming, of trading or formal employment as a means of livelihood has emerged. Formal employment is not the ultimate solution to socio-economic problems. It is associated with kurimia/dependency, and powerlessness and uncertainty. The ideal is for one to work for himself. Most families straddle the formal and informal sector.

At times circumstances force the women to exchange their food for money: milk, eggs, beans, potatoes are sold for cash. At other times they can choose what and when to sell. They have school fees to pay, farm inputs as well as soap and fuel for light in their houses to buy. Both the provision of good food and school fees have investment characteristics in health. If education is denied a child, the child is disabled for life. It is multiple deprivation because access to food as an adult will depend on ability to be hired, that is whether one has marketable skills or not. Health, on the other hand, is 'invisible'. It is a conflicting position for the women. The vital importance of good food may be overlooked resulting in unsustainable food supplies. In a sense, she has the choice/option of either adjusting to societal demands or keeping the children out of school. Her decision making, what looks like an individual, private decision is bound in economic, political factors beyond her control.

Pyrethrum is the only cash crop because wheat production proved unsustainable to many. It is not profitable to grow wheat on a small acreage. Most people in the area stopped growing it in 1975-80 period due to a three year non payment period. Milk is a major source of income, but it is as seasonal as most other food crops.

> They (men) bother only with milk and pyrethrum because they go to the banks to get the money.

The women as producers have no control over the prices. Most times they do not get to know how much their produce fetched at the commodity boards. The women put in long hours of labour, but may be denied adequate consumption of the food. Their names do not appear at the marketing boards or the banks. The only form of cash they handle is that from sales made at the farm gate or petty cash.

> My husband is retired man for three years. We plant fruits. We sell some and eat the rest. Unless in times of drought, we grow enough to eat. We do not sell enough to make much profit. In times of drought, we buy maize and beans, but

> this year we have not bought any.
>
> We don't sell much to bring in a lot of income. We sell an odd/extra bag.

It is difficult to maximize sales when one is dealing in perishable goods and with corrupt middle men. The women are forced to either sell at low prices or watch the produce go to waste. It is not an issue of choosing money over food, it is a choice between converting their perishable goods into durables/cash or losing it all. Prices have become guides to the behaviour of women on food choices, selection and even sales. They sell whatever fetches the most money, and buy what costs the least amount, if they have a choice. Sale of dry grains and legumes is limited. Men do not interfere with these sales and this, coupled with cash gains, gives the women a sense of control. The younger women are affected most having to sell food because by virtue of their age, they have young children and school-going children. They do not have working children to remit funds home. If anything, their parents also expect something from them occasionally. They live from hand to mouth like 'town' people who own no assets. In the instance of a drought or crop failure and subsequent powerlessness, what do they do?

Food and its production has become a vehicle of power in a most basic and tangible form. It is all the women have at hand. Dealing with the reality that a family can be denied optimal food consumption to meet other pressing needs is in conflict with the perceptions the women have about the place of the food in a family. Some are forced to give more attention to the laborious pyrethrum and fodder for milk cows at the expense of food crops. It is assumed that food can be bought later, cheaply, from their neighbours with cash earned from milk and pyrethrum. Payments have become both irregular and unpredictable. Individual milk sales, as opposed to marketing it through the board, are increasing. This process can fetch ready cash payments. They no longer trust government controlled commodity boards, but need their services. They need a reliable outlet for their produce.

> They are *wanyonyaji*/oppressor.

One litre of raw, fresh milk sells for five Kenyan shillings when sold at farm gates, in this area. They do not need to pay to transport their produce to the creamery. This price favours the consumer over the producer. Can this short cut practice be sustained profitably during the rainy season, given that milk is a perishable commodity and milk production increases three fold during the wet season? The small amounts of money earned on a daily basis cannot accumulate fast enough to meet the demands of school fees and major investments. Despite the fact that they do not use the banks much, as members of Kenya Cooperative Creameries (K.C.C), they can access loans faster, if need be, because milk sales give a constant regular income.

It is difficult to tell what will take precedence in the future. The options are food as money or money as food through formal employment or trading. The latter is more versatile, not perishable or subject to droughts, but it is subject to inflation and devaluation. On the other hand, if they opt for money as a source of food, they will have no control over what they consume. It will be dependent on the market forces and other circumstances that impact on it. Both forms will depreciate with increased consumption and will require constant replenishing. Food as money is easier to replenish and sustain, as long as the natural environment remains favourable. For now the women are exploring and experimenting with both forms of food and both forms, complement each other.

These economic demands and segregation from their children by schools, are contributing to women providing less care and feeding of their children. They are losing an important source of traditional prestige and influence acquired through giving food.

I cannot force them', to carry food to school, is a woman's reply.

> The teachers have tried. Sometime they enforce the rules then the kids relax. We even emphasize it in committee (School committee) to say the rule must be enforced. The rule is enforced for a week, then it is relaxed. They just leave the food on the table. You know of course, they fear the teacher more than us.
>
> It is not because the food is cold. They never bring back food when they get to carry it. I think it is the distance they have to walk.

For the children in boarding school, they try to make good food during the school holidays where children's preferences take precedence. 'To attract kids home not to go elsewhere where they are fed better'. The women do not want to loose grip. They feel school may be in competition with them. Time is not much of a constraint then because children are able to help out.

Cultural contradictions

Cultural knowledge is never consistent in every detail (Spradley, 1979). There are some inherent contradictions that people have learned to live with. More food is seen as better health, yet in the light of limited resources, there is limited intake. Some food is sold instead of consumed. They want to keep the old tastes yet want to be modern. Some 'good' foods are said to elicit negative feeling.

> The men took sour milk mixed with fresh blood. It was then ripened for four days, whisked to homogenize and then drank by men and young men. No woman would like it. It looks so bad because of the bloody/reddish look.

Certain foods are advocated for, but never consumed, as a result of certain physiological, or sensory attributes. They acknowledge the nutritional attributes of the food, but some foods are not consumed for some reason or other. Other activities take priority.

> Such vegetables(ifpp), I take two days before I have even cooked any, but they are there as you can see.
>
> Some times I feel lazy. When the girls are here I just sit down and let them cook whatever.
>
> As you can see, I have vegetables right outside the house. For me it is because of lack of time.
>
> We need to be reminded often. I keep forgetting these things.
> It is easier to forgo cooking a complete meal than to leave farm work undone.
>
> I would like to eat well. I would like to add fat to food, have a different food item each day, but as you can see, I do not have the means to do that.

From observation, the women in the lower zone had more 'white' food. Cabbage was added to almost all the food, albeit to add bulk. Beans were used so sparingly that most food contained more maize and potatoes. When asked how they mixed the grains and legumes, the proportions cited did not match with the practices observed. They claimed to grow and consume ifpp, but none of them had planted any in their gardens. The proportion of maize meal to other grains in the porridge was higher than admitted in the interviews. What they called sorghum or millet porridge may have contained a third or quarter of that grain to give the porridge a characteristic colour. More *Ugali* is consumed in the lower zone too than is admitted. *Ugali* is even consumed with tea for some meals because of a lack of a more suitable accompaniment.

Roles of men and women are changing.

> The meat was shared by the man and he roasted the meat. He also shared out the soup. It is not like these days when any body can walk into a butchery and buy meat.

Food selection and purchase are no longer strictly a woman's responsibility. Several women from the upper zone said the men did most of the shopping for food. They are more mobile and would bring the supplies on their way back home. This means the woman doesn't need to worry about getting to the market if the man can. Consequently, this denies her a chance to get out, meet people and choose the food she would like. Markets for women have a dual function: a place to socialise and a place to sell/buy food. Most of the men purchase/agree to purchase meat, sugar and salt, items that are not purchased in bulk volumes and should realistically not take a woman away from a whole days work. Men would not typically buy beans, maize, or vegetables unless they have vehicles to ferry the supplies. Men do not carry loads.

Certain anecdotes assume that the women did not challenge certain ways in which food was used, but in actual fact they do.

> I tell them if they did that (ate meat outside), then my girls and I will slaughter one of the animals at home and eat it meanwhile.
>
> The man shared out the meat. There was meat for women such as the thighs

> women could not eat, the chest/ribs. It was tough! Not like these days/now when people can afford to swing around. We were really oppressed! We had it.

Informal techniques of Social control

A major problem in every society is controlling behaviour (Spradley, 1979). In every society and every social situation people have learned informal techniques that effectively control what others do. There are various stories that controlled greed and promoted the sharing of food. These stories have no place now in the face of economic crisis, and the hoarding of essential foodstuff. Sharing and hospitality may still be valued but individual needs take precedence. For instance the saying ***cia muka mukari iriagwo na mambura,***/literally means food from a mean woman eventually gets consumed when there is a ceremony. She cannot escape from giving out food forever, a day will reach when she will have no option but to share.

The women use food to keep children at home. This was mentioned in connection with children from boarding schools. They also prohibit children, especially small children, from eating in other peoples houses except their mothers/grandmothers. This stance recognises feeding of a child as a big source of influence on who and what the child becomes. This also makes it easier to monitor food intake and consequent changes as a result. Besides any woman who cannot keep her children full is derided. Food is also used to gain status, through hospitality one gains a good name. There are ways of ensuring adequacy at certain times,

> There was meat of the 'home'. It could not be shared with strangers. Meat slaughtered when a child is born. The foods were supposed to give back the strength to the woman.

This assertion is also a cultural contradiction because it discourages sharing at certain times.

The women in the upper zone were very modest. When the researcher remarked the women lived very well, they denied it. Among the Kikuyu, modesty among the well to do is a virtue. The saying ***'wahuna humbira nda, Gikuyu ni gia kiunuthu'*** translates as one is not supposed to eat with their mouth open/ walk with their full stomach uncovered for all to see'. The saying if you are full, cover up your stomach for man is a malicious being/ you never know what another man may do to you, clearly explains the stance. Wealth and good living speaks for itself, it is nothing to 'sing about.' Gluttony and over eating are also discouraged.

Acquiring status

Every society has a variety of status and prestige symbols (Spradley, 1979). People often strive to achieve and maintain these symbols. Food consumed has the potential to give or take away status. The view of food as a commodity, coupled with notions of modern versus traditional food determines how this status is accorded. Traditional status foods were associated with men, fat and influence.

> A man should eat more, has greater energy needs,
>
> The fruits (wild) are small and black. Men do not eat such plants, they only know how to eat meat.
>
> Even men ate the berries too. After all God had dropped them. When we grazed we kept teasing them by asking' why are you eating boys/*kiihi* fruits' and they would say wrong with that, after all it goes down the throat and does not come back up'. They used to eat them, but did not want to be known to be doing so.
>
> My father had wealth. They went on raids and brought fat blobs. They were stored in buffalo skin. They brought this back. This was body fat or fat from the back of a goat. It was heated to reduce the amount of fat. We called the fat *'maraka'*. I was well brought up. Before we had wealth we used to buy the supplies.

Variety in foods, especially meat and health are status elements too.

> During feasts were *njugu, njahi,* ripe bananas and meat because big rams were slaughtered. Maize was not added to the dishes, *njahi* bean was preferred for it's taste; it was good to eat and helps the body to develop.
>
> When God has been gracious and enables us to have beans and vegetables, looking at peoples bodies, you see health, strength. They improve. They have strength to work.
>
> Githeri was taken to ikari by kids. Other times everybody ate the meat. May be 2 times a month. He cannot drink beer without meat. How can a rich man do that! That is what was a sign of wealth.! Power! {That is why the tradition of eating meat and beer has persisted}

Ability to cater during feasts and rituals and special occasions,

> During feasts one did not cook the maize and beans. One cooked *njugu/njah*i because the visitors can't eat ordinary beans.
>
> Of course we really drank beer. In fact I just stopped recently. I stopped because I could no longer cope with it. Both men and women drank but women could not drink out there on their own. You know girls were sold for beer, so when the beer came, the women drank it first, sampled it before the men. Why should they not drink it and it is for them? from their children? In fact there was a day when the beer consignment was strictly for women! All the women then drank it. Even beer, is food.

and the presence of significant others demanded status foods.

> You cannot give your in-laws ordinary food. Unless they chose to eat the maize.

Food can be moulded to display varying messages. Meaning is based on what it does to the body, and how it can be used to establish and sustain a status. The women, being from the same culture can read and understand the same messages. Traditionally different foods were a source of status. Even though their value is acknowledged, these foods are rarely consumed and therefore on a day-to-day basis, they are not important indicators. *Njahi* consumption is still evident in weddings, while beer consumption has a negative status among the women. It is associated with irresponsible behaviour of men, and lack of economic progress. In laws are still accorded respect by the women, at least in the rhetoric. It is hard to tell whether the idea is to avoid conflict with them or genuine respect.

In the upper zone, meat, eggs, chicken, *chapatti*, cocoa and *milo* were more frequently consumed. The women's hot pots included a variety of vegetables like carrots, cabbage and spinach. Food was fried in adequate oil and tomatoes, sometimes curried. They consumed more fruit and meat. Bread was buttered. The tea prepared was creamier which indicates a generous milk supply for household use. The crockery was new and well kept. Being able to buy cooking fat, sugar, beans, and wheat flour in bulk is a status symbol. This keeps the women from running to the shops often. It relieves the stress of thinking about basic things, and gives them time to deal with 'higher/greater' issues like food preparation and productivity on the farm. In the upper zone limited time for food preparation may limit the variety of food consumed (See figure 4).

The lower zone has more economic and 'know how' constraints. One was more likely to observe tea without sugar, watery tea and more 'white' mukimo in this region. The latter does not require cooking fat for preparation. *Muthere*/white *githeri* (that is maize without beans) is cooked or *githeri*, is cooked. In such cases the amount of beans is below the desirable quantity. Bread was consumed without butter with the exception of a few families. It was observed they denied themselves butter and sometimes sugar, but offered them to the researcher, using a known status symbol when a guest comes but not corresponding to daily practice.

By producing, choosing and preparing certain foods, the woman determines what the food will say about her and her family. This is judged in terms of how the family looks physically. Her shamba, house, crockery and skills she displays are reflective of her. This makes the women work tirelessly for they are defined according to their ability to produce enough food to support the family and earn an income from it. The women hope the group can update their skills in food preparation and keep them at a comfortable level. This, coupled with hospitality accords her influence. The younger women are expected to know how to prepare the modern foods like chapatti and rice. Older women ask younger women or daughters in law to prepare these foods for them on occasion.

During holidays the girls make *chapatti*.

Not knowing what to do and not having enough foods induces feelings of ambivalence and conflict in the women for not being able to provide a socially optimal diet. However, they all acknowledge, that all families are different and people are at various levels socio-economically and otherwise.

All homes are different.
People are not the same.
It is hard to tell how other people live, but as for me....

No woman from the upper zone apologised for the food they offered, but an apology about the food they served was a constant remark among the women of the lower zone. They claimed the drought/chance had forced them into the situation in which they found themselves. Incidentally these women with less resources were more generous to each other and to the researcher. They share food more.

CHAPTER SIX

ADAPTIVE KNOWLEDGE

Solving problems

Culture is a tool for solving problems (Spradley, 1979). Ethnographers seek to discover what problems a persons cultural knowledge is designed to solve. The women displayed a number of approaches to solving problems. To be able to feed the family well, all the women get some food from the market to supplement what they do not have or to substitute for other food stuffs.

> I buy supplies of food every week. There are those people who go to the market every week and I send them to buy for me.
>
> We have enough maize, but I have to buy beans to make up the deficit.
>
> I have not thought of buying in bulk. I buy when the supplies get finished

They sell food when they have a surplus or when they must. Some prefer not to familiarise their children with sugar and other foodstuffs so as to lower food costs. They opt for a one pot dish like *mukimo* or *githeri* to save time and energy. Dishes like *githeri, mukimo* and *gitoero* to some extent can be made in bulk and are easy to store, reheat or modify.

> Mashing food means one does not need cooking fat to fry the food with. (so more of ugali is eaten. It requires no beans and no potatoes!!)
>
> I cook food for two to three days. We eat it either hot or cold.
>
> If ugali remains, it is cooked in /mixed in with the fresh ugali. It is possible to warm it with a fresh lot.

Ugali too, comes in handy because it caters for needs of all: the elderly, children and others. When they want meat, they opt for the chicken they have raised and do not then have to buy.

> Occasionally we use chickens because we do not need to buy them.

Some of the solutions they resort to, like shopping at the corner store to save money spent on transport to the market, may create a different sort of problem.

> The market is 30 kilometres away. We do not go there we wait for the corner store to bring us food. That saves us the transport money.

One kind of exploitation that results is lack of choice and variety, and sometimes expired/poor quality foodstuffs may be sold to them.

> I hardly go the shops. My husband brings food that we need to buy. I used to go to Nyahururu to deliver the pyrethrum, but now I do not.

Sending a husband or child to the shops saves a woman from taking a whole afternoon off from her busy schedule to go shop. One wonders how much food a husband would be willing to carry back when sent to the shops and how thorough he is in selecting foodstuff that he does not prepare himself. The alternative is to send children. With bulk buys or items not locally available, they send their peers who go to the market often for foodstuffs, or the people in charge of milk transport.

In times of crisis they deny themselves food in order to cater to the needs of others or make corresponding changes/adjustments in their lifestyle. In terms of meeting economic needs they sell assets(food) among other things.

> We had to sell a cow to send the boy to university.
>
> We have planted more pyrethrum now.
>
> We have withdrawn the kids from boarding due to increased fees and the fact that they expect us to pay the fees all at one go. Now of course that man's retired and the milk production is sometimes not so good. We have to rely on his small pension and therefore we can not afford to retain them there. The pension is too little for six children.
>
> It is better to *'guthii njaga*/walk naked' literally means not be up to date, ut take

> the kids to school.
>
> At least each home has a person who is formally employed. That helps
>
> When sugar gets too expensive we for go it.

In terms of their work load, fuel and water; constraints that take up much of their energy and time,the women had this to say,

> I have one worker, and I have enough water to feed the animals as well.
>
> I have two boreholes and a tank
>
> For example my improved *jiko*/stove, had I not been in the group I would not have known about it. I use much less fuel now.

Decision Tree Modelling

This problem solving activity can be specified in a more detailed way by using a Decision Tree Model (DTM). Decision modelling is a new area which still has rough edges (Gladwin, 1989, P. 35), and is microscopic and tedious. But detail and bulk go together in cultural knowledge, and details are important before generalizations can form. Analyzing how the women decide what food to prepare is a powerful tool for understanding their culture. Decision modelling takes us beyond classical ethno science. It uncovers a context of shared cultural knowledge of the individual, 'meta knowledge', knowing how or knowledge about cultural rules (Werner, 1988). The meal prepared is the end/goal of all the efforts put in/that go into production, selection and preparation of the meal. An action is a consequence of meeting certain conditions that may not be obvious at a glance. Food consumption is a goal, an end in itself. There is the decision making in general and modelling of decisions in particular, that is cultural rules versus actual/specific behaviour of women in a household. How do the decisions the women make reflect what is going on and what they are going to do, that is describe current practise and predict future actions?

There are various forms of decision models (Werner, 1988 ch.4). These include decision tables, flow charts and ethnographic decision tree model (Gladwin, 1989). The choice of the ethnographic decision tree model (EDTM) for this study was because it is a 'model of the insiders' decision process from the insiders own terms and phrasing of their decision criteria(Gladwin, 1989: p. 9). There was a deliberate attempt from the researcher to get at the basis of the decision as the women articulate them. Criteria must be formulated in language specific to participants (Werner, 1988). Indepth interviews and participant observations were necessary to make such a model. The information is useful at two stages; one which determines the reasoning behind practices of the women and one that evaluates factors limiting consumption of a food (Gladwin, 1983).

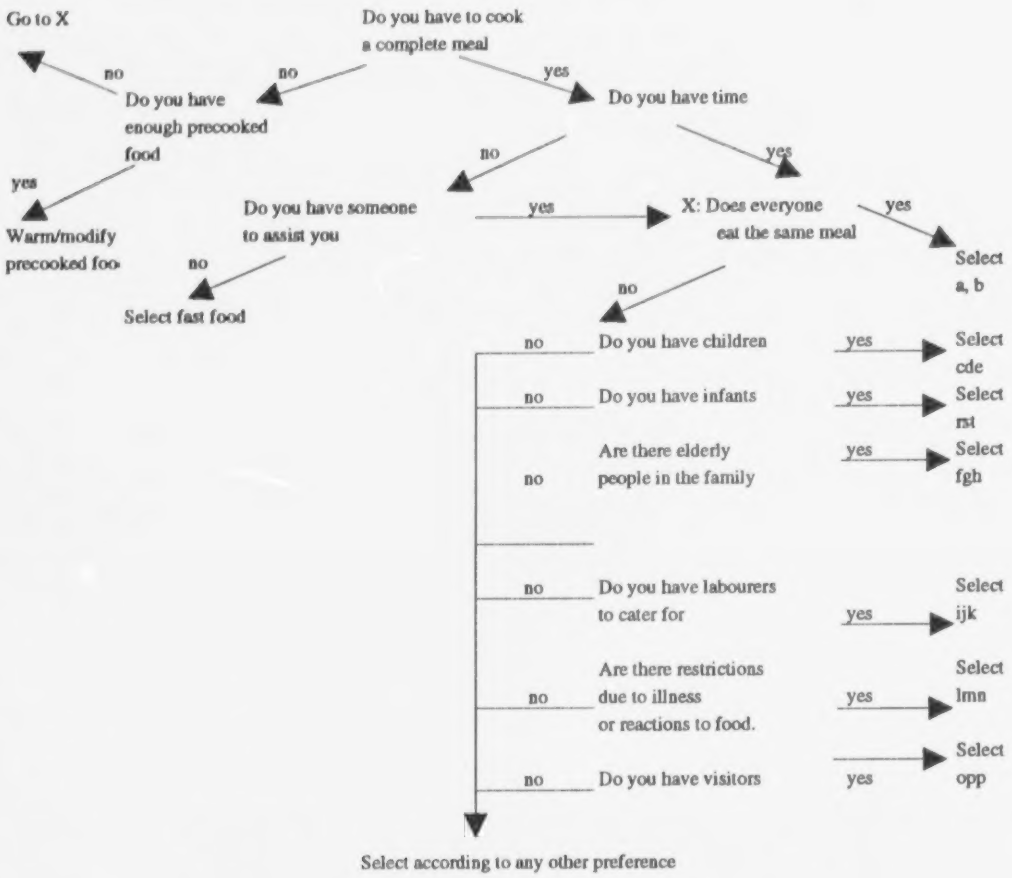
Decision criteria are high level attributes attached to starting conditions of complex plans. Goals to be attained may be new structures, but the goals are still mental objects with attributes. The difference is that they are hypothetical, desirable, often valued but not necessarily achieved (Werner et al, 1988). Rules get broken when the need arises. The context within which the decisions are made are also high level attributes, it is a high level componential analysis, rules are (meta knowledge) conceptual structures. For example, in choosing *mukimo* rather than *ugali* for a meal, each has specific attributes and characteristics which must be recognised. The criteria becomes the information actually considered by the women before they make decisions. The decision considers all possible combination of decisions, not just those explicitly defined in the text, and all the possible outcomes. The action taken such as making porridge is a consequence of meeting certain conditions, and associated actions of having flour, time and adequate fuel to do it. The difficulty here is trying to model many persons' decision.

In this study, the traditional and contemporary setting are used to create a new context. It allows the women to behave appropriately in the new district, to care and nurture the family, feed, produce, and market food, deal with new forms of education and multiple stimuli. The question then becomes, are there options that exist despite cultural, economic, regional, geographic constraints that the women face ?

Figure 3

Part 1: Decision Tree Model. Social and Cultural Factors

GIVEN YOU WANT TO MAKE A MEAL FOR THE FAMILY


Go to X
Do you have to cook a complete meal
no
no
yes
Do you have enough precooked food
Do you have time
yes
no
yes
Warm/modify precooked foo
Do you have someone to assist you
yes
X: Does everyone eat the same meal
yes
Select a, b
no
Select fast food
no
no
Do you have children
yes
Select cde
no
Do you have infants
yes
Select rst
Are there elderly people in the family
no
yes
Select fgh
no
Do you have labourers to cater for
yes
Select ijk
Are there restrictions due to illness or reactions to food.
no
yes
Select lmn
no
Do you have visitors
yes
Select opp
Select according to any other preference

Cooking is a purposive behaviour achieved through the acquision of the food, making a fire, and choosing which food to cook. These are decisions to initiate the behaviour. The actor/woman then is in control. The first part of the decision criteria is pre attentive elimination by attributes (Gladwin, 1989). The women drop certain foods from the decision criteria. The main decisions (See part 1 of Decision tree Model) are whether to 1. cook a fresh dish or eat leftovers 2. modify pre-cooked food, by adding another food to it such as potato to githeri to make mukimo or cook an accompaniment to ugali. 3. cook two 'pots'. These decisions determine what is consumed eventually. However this decision is determined by who will eat the food, what is appropriate for whom. In particular, the presence of children, infants, the elderly, visitors, and ill persons determines what is chosen. These groups of people within a family, act as components and dimensions of contrasts with regard to what the woman cooks. Other criteria such as when/time of the meal and who is cooking influence decisions, but to a lesser degree. The women have a considerable degree of control over that. The 'when' influences the choice between fresh food and pre-cooked food/modified pre-cooked or even part meal. Some women cook food to last two days due to perceived time constraints. Activities the family members are involved in determine what they will eat. The evening meal is more elaborate because the women have more time to prepare the food, and children are at home, not to mention that the women do not have to cater to labourers as well.

The criteria are cultural rules or goals to be aimed at. For example infants cannot be fed maize, and the diabetic eats a special diet. Meat is offered to visitors. For the ill, one does not decide what to offer. It is decided by nature of illness. Fat, sugar, maize or salt may be eliminated.

> Due to illness, I do not eat maize so I like the *mukimo* without maize. The doctor told me not to eat it. I crave the taste, but I cannot dare eat maize. I tried some green maize once, and It was disastrous!. I had such pains.

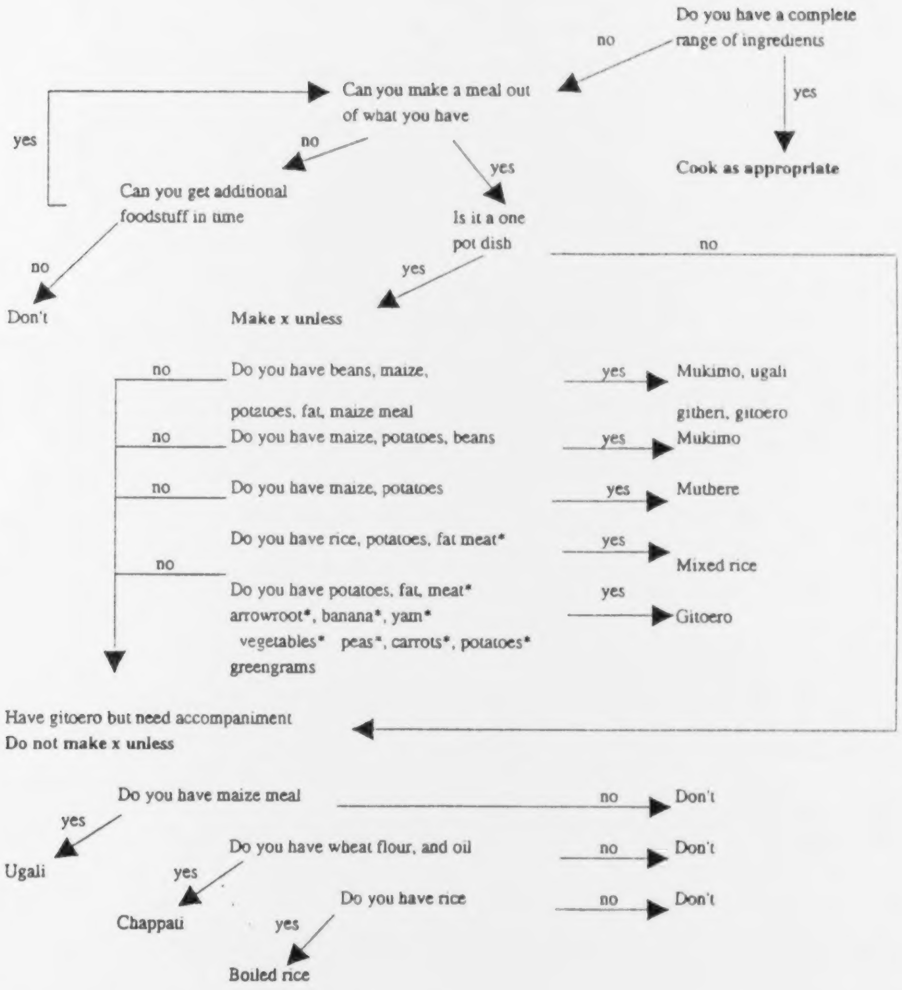
In stage one, the women eliminate rapidly, often pre-attentively, all alternatives that have unwanted aspect/attributes other than the ones desired. The major criteria seems to be what, for who, when, and why in that order. The what is implied by who the food is meant for. Individual choices conform to a socio-cultural guidelines that are not specific in detail. These rules function as guides. This complex decision making situation results in the 'average or normal pattern'. The following diagram illustrates the ideal decision process. This process is what Gladwin (1989) and Werner et al (1988) term as elimination by attribute/aspect respectively. This stage is pre-attentive and not always conscious.

Part 1 of the model gives dimensions of contrasts within a family and among the women. This is a basis for social differences among them, by the zone they live in and implications for food availability, the people they have to cater for and conditions they have to meet with that one meal. This explains why one family eats one food and not the other. These are also zonal/socio economic differences.

> They (family members) have no reason to choose food because they have no alternatives. (Zone x)
>
> The children decide what they want to eat. (Zone y)
>
> I do not buy fruits. My children do not agree with some fruits
>
> The peas make it difficult to grow beans. They prefer beans to peas. Having to buy all the foods is very expensive.
>
> My husband is butcher. We get half a kilo of meat every two days.
>
> I cook what I do because I have it and because of what I know i.e what I can prepare and what I have to prepare it with.
>
> Because of my stomach problems and my sick husband we eat different foods from the rest of the family.
>
> When the rain falls well, then we have enough to eat.
>
> As regards the women, when workload increases, it is higher for us, (younger women).

Figure 3

Part 2: Decision Tree Model. Objective Reality


Do you have a complete range of ingredients
no
yes
Cook as appropriate
Can you make a meal out of what you have
yes
no
yes
Can you get additional foodstuff in time
no
Don't
Is it a one pot dish
yes
no
Make x unless
no
Do you have beans, maize, potatoes, fat, maize meal
yes
Mukimo, ugali githeri, gitoero
no
Do you have maize, potatoes, beans
yes
Mukimo
no
Do you have maize, potatoes
yes
Muthere
Do you have rice, potatoes, fat meat*
yes
Mixed rice
no
Do you have potatoes, fat, meat* arrowroot*, banana*, yam* vegetables* peas*, carrots*, potatoes* greengrams
yes
Gitoero
Have gitoero but need accompaniment
Do not make x unless
Do you have maize meal
no
Don't
yes
Ugali
Do you have wheat flour, and oil
no
Don't
yes
Chappati
Do you have rice
no
Don't
yes
Boiled rice

*** Optional**

In part 2 of the model or operational reality, the women eliminate food they have no access to due to financial, regional/geographical or seasonal constraints. One cannot eat what they do not have. {See part 2 of decision model}. At this point all environmental constraints are eliminated. What the women cook is in most case pre-determined by the season of year and foods particular women can produce or purchase. The model indicates choice points at which alternative foods are identified.

> My mother was a market woman so we just cooked what she brought home from the market.
>
> The issue of buying is a problem.
>
> I use about Ksh. 500 per day and the basket can not get full.

They cook *githeri* if both maize and beans are available. If the women have potatoes too, then *mukimo* can be prepared. Otherwise the option would be *ugali* or some other food. Ugali can be prepared if maize meal is available and an accompaniment too. Foods the women cannot prepare by themselves or do not have the facilities to prepare, such as chapatti or pancakes, are not consumed or are limited to school holidays when older girls are at home. Those foods that are not appropriate are eliminated; for example, the women will cook *githeri* unless they are cooking for children, have visitors or have to avoid it for to health reasons.

Part 2 of the decision model represents the real life decisions, those which face the women daily, maybe twice daily. The criteria in this case count as 'maximization subject to constraints', as coping strategies of the women. Once the woman has passed through those conditions in stage 1, she already has identified the possible foods to prepare/alternatives choices. The second part is the 'conscious/hard core part of the decision process' (Gladwin, 1989: p. 20). These conditions include availability/lack of certain food items that lead the women to consider the other options in the set of alternatives. 'We eat potatoes and rice when it is available'. As constraints get in the way, they lead her to the next set of conditions. The women go down through all the possibilities until they exhaust all the possible outcomes. If no food is available at all, then they may buy, borrow or harvest some food item. 'Some times I buy or the neighbour gives us some'.

The daily food event requires minimal choices to be made. It changes little from day to day. In the instance of physical unavailability of a food the women cook what is available. Stored dry legumes or grain and the garden are the main sources of this food. Some form of food has to be eaten, the choice is no choice. Therefore possible choices may not be choices at all (Werner, p.166). 'This season there was no harvest because the plants were hit by frost.' For the diabetic husband, the diet is prescribed, the same applies to young children who react to certain foods. Then two pots have to be prepared.

> Whether I have visitors or not, I always have to cook two pots.
>
> Recently I went back, I tried a little maize. My daughter does not like food without maize. I also do not take tea. It used to give me headaches and the doctor stopped me, then they disappeared. I take milo, no cocoa no coffee. I drink porridge often.

The elimination by attributes, region, illness, availability, decreases the number of options available to individuals. The season and region determine options available. 'This season we have no potato'. With regard to constraints, some aspects such as taste, specific quantities of maize in proportion to legumes, amount of milk in tea, inclusion of meat in a meal, the specifics and fine details, cease to matter. Most foods such as vegetables, meat, some legumes, cooking fat, and sugar become optional (Part 2 DTM). Food will still be consumed, but the quality of food decreases considerably. The proportions of some food to others, such as legumes to maize and even frequency of the meals may change. The idea at this point is to fill the stomach. The potato is used extensively to this end (Figure 4 value of potato). Cultural practice seems to favour cereals over legumes or a proportion of each in the diet as was the case traditionally. Legumes are difficult to grow in the new Nyandarwa, and are expensive to buy from the market. To avoid having to cook different foods for the children, the old, the man, explains the prominence of the ugali especially in the lower zone, where the women face more constraints. It saves time, it is filling and can be accompanied by a variety of foods and drinks.

> My family does not eat *githeri* much. I have not familiarised them with it. Sometimes I see as if they are not full, so I follow it up with the *ugali*. 'Every shepherd knows when it's sheep are full'.
>
> I buy the vegetables and sometimes they use milk because I have milk. Some prefer sour and some like fresh.
>
> The real food is ugali.
>
> We eat *ugali* and vegetables. I have teeth but the stomach(here) does not allow me to eat maize. I do not grow vegetables so I gather or buy them. Sometimes I eat it with milk. The flour is whole meal. The other alternative is beans.

Rules pertain to cultural norms, social roles and physical conditions. Who made the rules? who communicates them and under what circumstances? Traditionally, the women/households and community made certain rules of feeding the family. Women communicate them to their daughters as they grow up, as they observe their mothers cater for the family meals or instruct them on what to do. Today school, health personnel and even the media reinforce the same rules or impose new rules. These rules as explained by various themes are for the interest of every member of the family, especially the vulnerable groups: children, the ill, elderly, and women at certain stages of their lives. However, some rules are more important than others. The importance of providing a meal is most crucial(having enough), then quality or dimensions of contrasts or attributes of the food follows. In the times of drought or and scarcity the rules can be broken. For in times of poverty, 'some cannot afford beans. No one need tell about it. You can observe children eating githeri and they should not!.' These cases are looked at as differences and not deviation. 'All homes are different.' The women, constantly claimed ignorance of practices in other homes. They are not supposed to pass value judgement.

Circumstances and chance beyond their control, such as the drought, poor producer prices of their produce, beans not growing well in the region contribute to these differences. The women being aware of this, seek to explain. They justify their actions in terms of drought, economics, having to cater for children, their workload and lack of alternatives.

Their decision criteria portrays a form of adaptive knowledge. The women described their own situations that triggered certain dietary behaviour. In the light of economic struggles and drought, they used values and knowledge already developed to influence decisions. They combine anything they can lay their hands on to make a meal for the family. They are applying their knowledge to a situation. The efficiency of that knowledge lies in its ability to adapt to changing circumstances. For example, they add more milk to tea that has no sugar. It is as if to say 'milk replaces the sugar omitted or the way they use the potato, and milk/ugali is good example. The potato too features in practically every dish (see value of the potato). Women from Zone A appear to operate on part 1 of the model with minimal constraints, having more of the optional foods, while Zone B operates almost exclusively at part 2 of the model. Culture is hence the overall framework within which all activities take place, and on the basis of which any activity is given meaning and content, but other constraints determine the final decision.

Limitation of the model

The model has been redefined to make it simple, but an attempt was made to make sure no potentially possible course of action was excluded. It is generative. One can read off the charts the activities resulting from the decisions. However, it does not tell specific amounts and proportions of various foods in mixed food dishes, though it does indicate the women arrive at a product which may vary from the standard product. The model omits the nested criteria of how much of a food is enough to give an edible product. The model does not clearly illustrate binary decisions, the fact that women move back and forth from one part of the model to another. Even when constrained by food availability, for example, they will still consider the appropriateness of a food to the user. With children they always end up with a soft, bland, food. Most families would not consume *muthere* under any circumstance. It is not an option for many, for it takes away status.

Most women would rather mill the grain and make ugali, which is more dignified. The model also does not tell how many meals are consumed in a day and how meals or the decisions made may vary with seasons. What constraints are more prevalent at what part of the year? When do they cease to be constraints? For example, ugali may be consumed with tea during the drought.

The model gives a list of accompaniments to single cooked foods but does not show which ones are preferred over others, or are considered most appropriate to what. For example legume stew, especially beans, is rarely consumed with ugali.

At the beginning, the women face the task of availing food for the family. They have to have something to give. The psychological consequences of having to go through various constraints are not indicated. The model does not tell what the women bring/carry into the decisions: frustrations, experimentation, social stimuli. There is no indication of how the women have had to adjust corresponding areas of their lifestyle besides their eating habits. Most importantly, the degree of control or lack of it, which the women feel they have over their environment is not obvious. In this case it is a dialectic; the women adapt to change in social and economic activities that relate to food and at the same time alter the economic system to fit their purpose such as plant cash crops, or produce more milk. The social context of choice is usually taken as a given, without recognising that social contexts are themselves the products of choice and decision making (Richard, 1993).

The distance to stores, the time constraints and what they produce in the gardens determines what will later be available to choose from. The women's decisions are conditioned by their immediate environment. Some women may cook food two days in advance. It ensures the family is catered to while the woman plans for the next meal. The decision is not being made there and then. It is made well in advance. When certain items such as sugar, fat, and meat are forgone, they become optional. As the number of optional items increases in a meal, the meals get richer, the quality is higher, not to mention the bulk. This is what the women ultimately aim for. This would increase the possible outcomes of their actions. It is also not clear from the model that the women do not order choices. They eliminate by aspects. As options increase, the women can comfortably order their choices. Status symbols begin to emerge.

CHAPTER SEVEN

CONCLUSION

Contributions of the study to Education and Health

This study has focused on women's indigenous knowledge pertaining to and use of food. The results included categories of food, characteristics of each categories, cultural themes and universal themes; these are referred to as substantive knowledge or knowledge about the foods. The last section looks at how that knowledge is used to solve problems; adaptive knowledge from which a decision tree model was developed. This section links these findings to issues of education and health.

Education and health are parallel entities. Each is valued in itself. Each has an investment character and resources devoted to either may produce returns over a time (Ohara, 1980). The above qualifications not withstanding, this section of the study will deal with education as a determinant of health. Education influences health through increased market productivity leading to increased expenditures on food, housing and medical health (Ohara, 1980; World Bank, 1989). In Kenya, the non-market influences of education on health and nutrition presumably stem from the education of women, especially rural women(UNICEF, 1989; World Bank, 1989). Another channel through which education influences health is change in tastes. That is, increased education might increase the value placed on health without increasing either power or its effectiveness in converting food, sanitation, and medical care into health. Gradually, more time and resources are devoted to health. On the other hand, a woman's awareness may affect her family's health through the influence of community variables such as the foods grown, consumed, and by dispelling false notions about certain foods. Any person should typically experience better health in a community where the level of education is high.

Women influence nutrition through their food habits. They are repositories of food and nutrition information. From a broader perspective, broad economic goals of developing countries are related to productivity and growth in order to expand consumption of goods and services and distribution of that consumption among members of society (USAID, 1992). Better nutrition can contribute to the attainment of both.

Women in Nyandarwa are an important economic force. They are the farmers in the district, and primary supporters of their Children. They are responsible for feeding children, teaching children about nutrition, establishing eating patterns and instructing children in the cultural norms related to foods (ICN, 1992). By providing water and fuel they contribute to nutrition. These items are important to food preparation. In addition women influence long term environmental stability (ICN, 1992).

Food, health, and child rearing practices, passed down from generation to generation of women, are not necessarily correct nor conversely wholly without merit. On the other hand, it becomes difficult to change those practices that should be changed. Nevertheless, it is the very strength of these traditions that are responsible for the special place in the community, that Nyandarwa women occupy.

Each generation does not identically reproduce earlier food patterns. In agreement with Hertzler (1983), this study showed food habits change in response to ways of dealing with life changes. The study illustrated that the major social conditions under which a food habit may change are; age, economic situation, season, and region of residence. Purposeful selection of participants for this study took into consideration the fact that cultural tradition does not impinge on individuals or families equally. Human beings are creative in their ways of synthesizing information and this was one reason for looking at family specific environments. The goal was to pay attention to the social context in which food preparation and consumption occurred. Social forces and unequal distribution of power are important factors in ethnography (Jackson, 1990). Their existence does not assure they are factors of influence nor can it be assumed that they are the only forces influencing the culture being studied. They are potential influences and their power must be described, demonstrated and analyzed. The link needs to be made between the social and cultural forces and behaviour of people in such a situation. Ethnoscience allows us to situate these factors that influence decisions and behaviour within a cultural context (White, 1990; Young, 1980).

Diet is identified as key to good health. It is not the only key but one that is amenable to change (Anderson, 1992). In Kenya and elsewhere diet is one aspect of lifestyle that is strongly regional (ICN, 1992). Most reported dietary change does not indicate whether or not the change has been radical (FAO, 1987). It fails to take drought, drastic rise in food prices, the pre-existing diet or the salience of health and nutritional issues as indicators of change into account e.g diabetes, ulcers, malnutrition (Kunlein, 1992, FAO, 1987). For example, the traditional diet of complex carbohydrate intake sufficed. It saved the protein utilization capacity, reduced hunger and was less likely to lead to obesity as it is low in fat, high in fibre. Traditionally, *munyu wa irura*/ papyrus salt, a low sodium flavouring was used instead of common salt (IFPP, 1991). Issues of what foods are actually eaten, are illustrated in the Decision Tree Model which draws attention to complex/dynamic relationships between traditional perceptions of good food and otherwise more practical ways of eating. This relationship impacts on what food practices are carried forward from traditional diet or what is left behind.

At present there are several studies done on people's common sense knowledge regarding relationship between food and health based on a local belief system (Sivaramakrishnan and Patel, 1993; Ojofeitimi, 1982; Nichter, 1983). It is hoped that this information will aid the planning of culturally responsive intervention programs (Silvaramankrishnan, 1993 p.121) which conform to both professional knowledge and local health beliefs and practices. Most of these studies do give a description of traditional knowledge systems but fail to provide prescriptive answers for incorporating these health beliefs into effective interventions. One of the weaknesses cited is the lack of precise methods for data analysis and the fact that traditional and other theoretical views may change with practice over generations (Malathi, 1993).

An historical perspective is essential in any evaluation of logic in food habits.

This perspective should address changes in ecology, cultural influences and disease patterns over time and place (Messer, 1990). In addition a historical analysis uncovers the social, physical and cultural environment in data (Jackson, 1990). The people of Nyandarwa moved to a different ecological setting when they relocated to Nyandarwa from a traditional Kikuyu district. The new district was inhabited by white settlers who had left various food items growing. The post independence era also exposed them to extension services. Their neighbours are all from non-kikuyu groups. Today, thirty years after independence, they have adapted to their own culture. Sivaramakrishnan (1993) asserts that when integrating any two domains of knowledge, it is better to have a good knowledge of one domain and use it as an anchor to the understanding of the second (p. 28). Biomedical principles should be integrated into the traditional system and not the other way round as is the current practice. Experience shows that most behaviour learned in an institutional setting is not functional outside of it. Most women consider health a priority but would not be bothered with all the scientific details.

It is evident, there have been clear contradictions in health messages from various agencies. Breast feeding, previously discouraged, is aggressively encouraged by various groups (UNICEF, 1989; FAO/WHO, 1992). Previously more animal products as sources of micro and micro nutrients were encouraged and promoted, now plant sources are being promoted. It is now understood that diets based on cereals complemented by legumes have amino acids that provide an adequate level of protein, assuming sufficient quantities of food are consumed to meet daily energy requirements (FAO, 1992). Indeed energy deficiency is a more significant problem than protein deficiency among populations where inadequate food intake results in child malnutrition (p. 32). This explains some of the dilemma and conflict experienced by the women. These shifts in emphasis will be ongoing as research continues to clarify links between diet, illness and health (McKie wood & Gregory, 1993). The messages come from various sources and serve as social stimuli. These include multiple stimuli from extension agents, friends, children, advertisements and partners and all are targeted at the women (IFPP, 1990, UNICEF, 1989). The women are over advised!!

Multiple social stimuli, coupled with the move from district of origin to a new food system, undermines the women's confidence in their own beliefs and skills of food preparation.

Amelagos, Leatherman and Sibley, (1992) noted that distinct cultural and biological approaches to the study of health are available. However, little success has been met in integrating the two. The ecological perspective relies heavily on the biomedical model and is not very useful in studying non-western societies. It also fails to consider political and economic factors that compound health in developing nations, thus hindering a systematic approach to health. The trend is towards a biological science model with a corresponding tendency to devalue the role of social or behavioral science. Yet knowledge from the social sciences is essential to successful intervention. This is not an attempt to devalue biological science, for the application of this knowledge to nutrition intervention/health promotion is central to success. The issue is to review how knowledge is structured and taught in the Kenyan nutrition curriculum.

Great emphasis is laid on the biomedical model, but this model is inadequate, too western and not culturally sensitive, promotes foreign foods and tastes, focuses on western diseases and does not start where the people are (Mcfadden, 1993; Kaniaru, 1992). In Kenya the emphasis has been on growth monitoring and supplementation, but sustainable behaviour change has received very little attention (UNICEF, 1989; World Bank, 1989).

The solution would be to integrate into one program two different sets of traditions and concepts. These sets are existing and operating and need to be blended in the real life situation in a culturally acceptable manner, as for example, the Kikuyu community and its concepts about food and health. In addition, the biomedical model and empowering/participatory approaches are needed for intervening in a rural, remote area. The major concern for Kenya should be to not "bombard' people with nutritional information or messages (Berg, A. 1993), but to encourage/get people to do things differently. Changed behaviour promotes self sufficiency which implies sustainability/being able to deal with their own problems. Like Berg (1993), I find it difficult to envision sustainability without behavioral change. That is why every program should start with formative research.

Alternatives to Biomedical model

Blair (1993), emphasises the importance of the cognitive processes particularly self efficacy beliefs because of their contribution to social learning theory (S.L.T.). An assessment of the problem, self efficacy expectations, and setting of goals should be carried out. What are the potential barriers to problem resolution? In applying the S.L.T to behaviour change, the physical and social environment of the women, expectations of outcomes and behaviour capability/personal factors of the women as barriers of change should be the focus.

Environment

The Health promotion model cites education as the key to securing desired change in the diet (ICN, 1992), while WHO in Health for all by 2000, cites the attainment of lifestyles conducive to health as central. Attempts to acquire personal skills and strong community action have been difficult. They are supported by economic and social policies in that order. Educational efforts affect attitudes through the acquisition of knowledge but freedom of choice to perform an action is not only hampered by a lack of knowledge (Waudo, 1993, Murray and Maina, 1993). It can be limited by learned helplessness and structural barriers that exist in an unequal society as indicated in the social differences mirrored in the decision model. Reasons for poor diet are rooted in social structure and should be tackled by dealing with dominant value systems. To do other wise is to blame the victim rather than the oppressor (Ryan, 1971). In this case the poor, the rural and the women who are the mediators of family nutrition are the victims. They are vulnerable to the deliberate manipulation of inflation, poor infrastructure, producer cooperatives and extension services.

Poor nutrition states are explained by failure of the women to modernise their technology to produce enough food to feed themselves (George, 1986; Altieri, 1991). They are lazy and uneducated. They sell food instead of consuming it. They are not diverse enough in their production to resist famines (IFPP, 1992). They are ridden with cultural attitudes about food which hinder effectiveness of program. They are hard to reach. As usual it is their own fault. The change is geared toward not the society as one might expect but rather the society's victim. This kind of analysis brings up programs that are terrifying in repetition (Ryan, 1971). The programs are geared towards motivation and food supplements (ICN, 1992; UNICEF, 1989). Even well intentioned attempts to remove some of the barriers to choice are condemned as victim blaming because they focus on the individuals. This ignores the individual's own choice or individuals own group dynamics. I do not believe that all health problems can be solved through social policy change. Victim blaming, on the other hand is the process of ignoring social structural factors while focusing exclusively on the individual. Consciousness raising and empowerment are mutually reinforcing.

Personal health belief systems are important and in the present study are shown by the kinds of food people choose to eat. Such beliefs are clearly a reflection of social, economic and environmental factors. These environments include, their gardens, what they can grow or can not, the market system, significant others in their lives: children and husbands, models or people important to the women.

Social learning theory explains health behaviour in terms of a triadic, dynamic mode in which behaviour, personal factors (cognition) and environmental influences all interact (Glanz, 1990, P. 161). Among the crucial personal factors are individual capacities to symbolize the meanings of health and to foresee the outcomes of a given behaviour patterns. Further factors are the ability to learn by observing others, to self determine or regulate behaviour and to reflect and analyze (Bandura, 1986). Continuing interaction between the person, his behaviour and the environment within which it is performed is called reciprocal determinism. The three components are constantly interacting. Change in one has implications for the other. For example being women of Nyandarwa provides the incentives and disincentives for providing optimal nutrition: ability to grow a variety of food. The women have the behavioral capacity to act and the potential for self control over their actions, like how much land to spare for growing food crops, what crops they have in the garden, how much they sell or retain for family use and what other activities, such as chicken or goat raising they do.

The women need skills to assert control over the availability and consumption of desired food. The women find themselves in a contradictory position, between the degree of freedom and control they have on various factors. They need skills to negotiate for more milk, and to stress a more diverse diet for their families. This can be done by voicing their concerns, and believing the men will be cooperative. The local churches are currently engaged in encouraging dialogue within families. The women should make use of that chance to discuss food issues. DTM shows the more food available on hand or the greater the variety of foods available, the more of it is utilized within the family. The idea is to increase the range of 'other' foods so that the families always have foods to complement and transform the staple as needed. The major concern should be to stabilize food supplies (FAO, 1992). The critical situations for the women are the behaviour of selecting, planting certain foods, proportions of grain to legumes that reflect her economic environment, productivity to expect from the land, interaction with other persons and her health; all can affect relationships with her spouse or children or both. Being able to perform behaviour, and having confidence to perform it in a way that is acceptable to husband and children, is crucial (Baranowski, 1993).

Women are people oriented. If a woman retains too much milk for household consumption, the cash income from milk is reduced. That may reduce the amount of money available for school fees and the family may have to sell assets/an animal to recover the balance. It is unadvisable to focus on a behaviour in isolation in development programs without corresponding changes in individuals and the environment as well. S.L.T is based on the premise that both people and their environment are reciprocal determinants of each other. "therefore assessment must include data on personal factors as well as environmental factors that influence behaviour' p. 247.]

For most of the women, (Maina & Murray, 1993; Mckie et al, 1993), the concern about diet and health is heightened by external pressures. According to Mckie

(1993), establishing a link between health, diet and food does not necessarily result in a change in food habits. Competing factors, such as resource constraints, family dynamics, socio-political issues and mixed health messages create a paradox. Thus preparing a 'complete meal' for the family is seen not only as a loving act by the woman to both the husband and children but also as a means of influencing their behaviour (Maina & Murray, 1993).

Individuals who are more 'internal', believe that they are individually responsible for outcomes. On the other hand, people who are more external believe their lives to be controlled by luck, chance or other powerful people (Waller, 1992) For the women both of these characteristics are exhibited depending on the situation they were in at any one time: age, zone and season. Many of them believed they could successfully perform a behaviour if other structures changed. For example, many believed they could cater better for the family, if the men helped with some of the work, if the producer prices were higher, or for the case of the lower zone, if they had water to irrigate their gardens. This is reciprocal determinism (Glanz, 1990). This concept considers multiple avenues to behaviour change, including environmental, skill and personal change (Glanz, Marcus and Riner, 1990).

Powerful others such as husband, friends and family determine behaviour/choice (Maina & Murray, 1993). In response to this contradictory/dialectical situation, Murray and Maina (1993) have identified males knowledge and attitudes about nutrition as a priority research issue. This information is crucial, however, one wonders if nutrition education/ information was in the hands of the men might they not adopt a supervisory rather than a advisory/ supportive role, given the power differential in most Kenyan household? One has to be sure this is not an negative outcome. To develop a health policy activity, one must recognize the key role women play in managing the house hold diet (Mckie, 1993), focus on men (Wilson, 1989) and on the entire family by re stressing their responsibility in sustaining intended change (Hertzler, 1984). Children should be given room to bring 'education' home. Home gardens for instance are also promoted by various clubs and groups in schools.

These environmental factors parallel the social conflict as well as means of social control of the universal themes in chapter three. The compounding issue is that the responsibility of food is essentially the woman's. She is held accountable for many things that are dependent on many other factors besides herself.

Expectancy

Women's perception of the outcome of good nutrition is positive. Optimal food is essential for optimal health. *Kwagira mwiri/kugia hinya* translated as a good body is obtained via food, and some conditions can be corrected through addition of certain foods. One does not need to work hard at convincing the women about the role of food in their health status. Traditionally the position of food was clearly and explicitly stated as illustrated in the cultural themes. Their interpretation of results of food consumption behaviour on health, can be an incentive to value expected/anticipated effects of lifestyle changes. Health, vitality, and disease free life as opposed to *Kuhinja/* Being underweight, *Kwaga hinya*/weakness and anemia. However, consumption of vegetables is low in certain seasons and fruits are not widely consumed by adults, due to their association with children or because of the high cost of those fruits not in season. These are cultural contradictions. The consumption of tea after meals is a crucial issue because Kenyan tea has a high tannin content which limits the absorption of iron and vitamin C activity in the body (FAO/WHO, 1992). This has social implications. Will the women take to porridges, or will they take the more expensive drinks like cocoa and milo? Tea drinking is very much a food event. The women tended to act when they expected an increase in food production without concurrent increase on the demands for their time money and labour. This was shown by their choice not to construct kitchen gardens recommended by iff because these needed extra fencing. These gardens were also supposed to be separate from the plots in which they grow other food crops. Why would they go to such trouble when they already have perennial vegetables in other plots?

Chance factors in this cases are the zone of residence, incidence of drought/no drought, competing needs such as school fees, poor roads and the ever increasing prices of consumer goods without warning. In recent months the payments for farm produce was also unpredictable. Practical needs such as lack of time and occasional laziness, even when the resources are available are strong issues in the lives of the women too. This was explained as cultural contradictions in chapter three. Most cultures contain actions that are inconsistent with beliefs, that people have learnt to live with. However, lack of vitality indicates a form of physiological and psychological fatigue. The women need supportive structures and constant reminding to sustain interest and actions initiated.

Goal setting is an internalized /cognitive based source of motivation. When sub goals like having enough to eat are achieved self motivation is sustained and leads to larger goals. Other goals may include variety, (adequacy in other terms), planning so that seasonal changes are not felt and future goals such as linking with neighbouring women's groups, which are within reasonable distance to exchange foods not available to them in certain seasons (Blair, 1993; Salazar, 1992; Brown, 1987). Bandura too emphasised the importance of the here and now goals, food for the season, even food for the day. The women may sell eggs to buy sugar or cooking fat. *Ndubia*/Tea without sugar is an undesirable attribute just as vegetables without fat are. The outcome from consumption of these foods are not satisfactory. Distal goals are too far removed in time to effectively mobilize efforts or direct what is here and now. Immediate rewards are more likely to influence the initiation of desired action than the emphasis on long term benefits (Glanz, 1990).

'Proximal' goals are an important avenue in the development of efficacy, which in turn influences the choice of future, further activities, and how long the behaviour is sustained; without them, there is danger of a relapse in behaviour. To feed the family first, to earn cash for fees, are easy behaviours to start on and they fit into existing behaviour. Target behaviour should be broken down into manageable components and a sense of self efficacy in mastering challenges should be developed. This is very important for the women with compounding issues in their life, and it will increase their interest in activities (Bandura, 1981). To design more effective health promotion programs Blair (1993) notes an assessment of personal as well as environmental factors, that influence behaviour is necessary. Motivation for change can be enhanced by raising awareness of the problem/highlighting the problem, engaging people in goal setting (planning ahead for food needs) and raising standards for performance by acquiring a sustainable regional diet, whereby the effects of season or region are not felt as much. (More meals, adequate quantities, variety). Goal setting with attainable sub goals such as enough grain and legume stores, creates and sustains self motivation. When grain is in storage, the women have less food to locate and do not have to spend money buying certain foodstuffs or maintaining both an abundance as well as variety. These facts may lend to to larger future goals. In addition they could maintain a constant supply of fruits and vegetables and link with the next region to complement food supplies. The women's group could buy and transport bean supplies in bulk when the prices of beans are lowest in neighbouring regions.

Behaviour Capabilities/Self efficacy

Recently the concept of self efficacy has been added to S. L. T. (Rosenbeck, 1990). This concept states that outcome efficacy and self-efficacy exert powerful influences on behaviour (Salazar, 1991). The former is the conviction that a particular behaviour will lead to a certain outcome and the latter the conviction that an individual can successfully carry out the actions required to produce the outcome.

Self efficacy is the most important pre-requisite for behaviour change and affects how much is invested in a given task. The essence is to emphasize multi-component intervention to address not only behaviour at individual levels but also change within the environment to support behaviour (Percel Simmon-Morton, 1988). Once desired behaviour has been identified, it should be translated into practical meaningful intervention strategies, for example food security and a sustainable regional diet with an emphasis on variety of foodstuffs and individual entitlements. This need has been identified through formative research (Joddy, 1989; ICN, 1992).

The program would focus on these concepts. An educational model is specific to a given population at a given time and for a given purpose as supported by data.

"I can not handle the *'cebe cebe* '/ translated as those town, modern foods", one woman asserted. Such a woman viewed the behaviour not to be for her own kind. This was of course influenced by the individuals perception of these expectations. For example fixed meals times, unfamiliarity with certain food items recommended, and idea of standard outcome out of food product/ having to measure foodstuffs to the last gram, can make some women unsure of maintaining a behaviour pattern. This concurs with Fishbein's theory of reasoned action (Fishbein, 1975). Attitude towards a behaviour and the influence of social and even subjective norms on behaviour, influence the intention to perform an action.

The Health belief model (HBM) incorporates major psychological and social influences on health decisions. It states that there is a gap between an intention to act and the emergence of a given action. In this research some women were observed who stated that they had intentions of planting the IFPS but had not got to doing it for one reason or other. This gap urges us to focus on various factors that inhibit or facilitate the translation of intention to action such as the work load, cultural rules or even failing to produce enough food in a particular season. This delay or inconsistency in actions reflects a universal theme, that of cultural contradictions.

The women acknowledge the value of an action, but for some reason cannot or do not perform it. Rapid increases in farm inputs coupled with delayed payments for farm produce, affects the planning process for inputs. Belief systems incorporate various beliefs which are critically important to decision making, these include costs and benefits and also 'attribution beliefs' which indicate the extent to which an individual accepts a particular cause and effect relationship (Wright, Jones and Howe, 1989). The women do things in a certain way because they claim they do not know any other way to do things. Ignorance is cited as a reason in such instances. For example the IFPP sought to create beliefs that increased health can be achieved by increased consumption of IFPS, but failed to indicate other vegetables can contribute the same nutrients (IFPP, 1992).

Beliefs are important, especially as they relate to locus of control and self efficacy of the women in maintaining their power as providers of a sustainable diet. *'Ngumamenyeria nyama ciumage ku?* translates as ' how on earth can I sustain such a practice?' There is no recognition by professionals that food choices might be made not in terms of nutritional impact on individuals but in terms of long term stability of food as a system. But these women asserted it. Continued provision of a food should be sustainable.

Locus of control contributes to an individuals capacity for 'self empowered decision making'. Self concept is the first key in the HBM. In the motivation system, (Wright, 1989), self concept is the counterpart of self esteem. The importance of self esteem for health related decision making and general self-empowerment is now part of the core doctrine of health education (Wright, 1989). Unlike Fishbein's model, the health action model (HAM) stresses the importance of fundamental values such as religion, morality, social life and even health as energising attributes. It considers important drives such as hunger, love, affection, thirst, poverty, lethargy and ethnicity. All the women took their spirituality seriously. A popular saying among the Kikuyu is *'Ngai ateithagia witeithitie'* translated to mean the women are stewards of gifts God has given them, including their children and land. It is up to the women to multiply their talents! for they shall account for it someday. By acquiring power and skills to overcome the problem, individuals may of course need help getting up, but it is their responsibility to do so. This assertion alone is enough to initiate and sustain action and is reinforced by *Mwana wi kio ndagaga muthambia/* stating they are willing to take risks, irrespective of the outcome. If nothing comes, out of the initiatives, at least they tried! and life still goes on, for there is one who cares for and comforts them. There is an intrinsic value in trying. This, on the other hand, also explains the peace some women experienced and articulated, with reference to drought. The women had taken their share of responsibility, the rest was up to God! They had no control over it.

In Fishbein's model beliefs are said to generate general motivation to action. It is normative in that it acknowledges an individuals belief about the reaction of significant other(s) to adopt new actions. The universal theme of acquiring status through food indicates that it is not enough to fill one's stomach. One's worth and dignity is important to the women as well. That is why the women let the children choose what to eat or offer visitors better food, meals not consumed on a typical day. There is emphasis on peer pressure and this has implications for peer education.

Self directed actions are motivated/directed by anticipation to match attainments and dissatisfaction with insufficient actions (Bandura, 1993). One self directed action that stood out was that some women, identified certain market women who they sent to the market to bring them back fruits or beans on a regular basis. Some families used services of the milk transporter to deliver fruits and beans for them once again, on a regular basis. The women did not need to get out of the district to access the foods. Incidentally these happened to be the older women. These self directed efforts incidentally are also some of the components of the universal theme of solving problems. One other major self directed strategy was undertaken by the church to encourage dialogue between men and women, within a family to support activities undertaken by the women, on behalf of the family.

HBM basic components are stated as value placed on a particular outcome by an individual and his faith that the goal will be achieved (Blair, 1993). It does not take care of competing issues with equal weight and those that have long term, far reaching effects. Some can be rectified along the way but others are time dependent! School fees versus food, a permanent house versus food or lack of food itself! When planning programs to promote lifestyle changes complexities of changing human behaviour must be considered. Success of such a program will depend on whether there is a felt need and how the innovation used is adopted to existing cultural patterns. Women will choose, not out of ignorance or any special resistance to technological change, not to participate in any project when they judge that disadvantages outweigh the advantages (Achola, 1979). This brings in a different approach to defining problems.

In theory, clients should be involved in the selection of intervention. This process raises their awareness of the problem and enhances their self motivation

(Rosenbeck, 1990). Self satisfaction, such as acquiring status through food, is made conditional on a certain level of performance. The women should be able to occasionally buy a loaf of bread or a kilo of meat for a change. Eventually these reinforcements develops an individuals self inducements to persist in efforts to match internal standards. The women of the lower zone, continually claimed what they needed was just water, not the food aid they kept getting. Food aid and dependence on others for daily needs takes away their confidence and self worth. They have no control over what and how much of it is offered. It does not take into account the specific needs of individual family members.

Like Glanz (1990), one asks, who will decide what the problem is? What is the relative importance of professional/outsider/agent definition of needs and insider/emic/target audience expression of needs? What methods will be used to give accurate and useful information? One participant had this to say

> You see, with us, because of the nature of our problems, we do not see the need to tell the details of how we live or the truth about our personal problems. If we have problems we just persevere and tell it to God. After all when you researchers leave, I'm still going to go without food. They are not going to do any thing for me/about it any way. Yet there is the danger of it being said around, 'if you go to so and so's this is what they eat'. I do not want to be used as an example. That is why you may notice most of the women, especially the older ones, not being specific about certain issues.

Clearly the women have developed a strategy of dealing with strangers/managing interpersonal relationships. Impersonal relationships make up a major part of all human contact (Spradley, 1979). The women as a result have developed a strategy of dealing with people they do not know to protect their dignity.

On the other hand one younger woman confided to the researcher, that the older women could be patronising at times and occasionally made decisions inappropriate to the younger ones. Naturally some of their concerns will differ due to age and other social differences. In Kikuyu social relations, one is supposed to respect an older person irrespective of whether the older person is right or wrong.

Age confers status. Any actions that imply otherwise are condemned as deviant behaviour. One has to bear in mind that the women are from the same locality, some are related, the locality is their home for life. It is unlike an institutional setting or career position that can change with circumstances. This form of silencing of the younger by the older women has strong implications for group dynamics. Mechanisms to ensure full participation of all members should be developed.

This brings us to the question of, who should gather information for needs assessment? Some community organisations and leadership are cited (FAO, 1992) to be technically weak, while others are unable to assess and analyze nutritional problems adequately or generate adequate action as a result. Whoever does the needs assessment should be one who the participants can trust, one who can respect the participants or better still the participants themselves. Ownership and participation are important to success of programs. Participation is necessary and ownership of a project or initiatives is empowering. The government or NGO should be able to provide resources, human and non human but not take control.

Across the health models, the important regulatory factors for behaviour are social norms, personal expectations and environmental reinforcements (Bandura & Gingiss, 1993). These factors should be assessed in any attempt to induce change in individuals (Mcland and Aero, 1993) note that in future social and environmental factors will be given greater attention.

Social norms are influenced by the perception of what others think/expect of their actions and the individuals motivation to comply with other peoples wishes or not. The implication is that people perform actions they believe they ought to perform (Salazar, 1991). Therefore change in behaviour is ultimately change in beliefs.

Individuals who value the perceived effect of a lifestyle as much as the women do, will attempt to change if these circumstances hold first: if current behaviour poses a threat to personally valued outcomes and secondly if they believe a particular behaviour will reduce those threats. Finally, they will try change if they are personally capable of adopting the new behaviour (Blair, 1993 p. 249).

To increase the level of health maintenance, intervention should be targeted to specific types of health beliefs and needs to take into account the importance of social differences even in a group that seems/sounds homogenous from the label, and it needs to offer alternatives at every point! (Jensen, Conte and Glandon, 1992). The solution to food insecurity and malnutrition will be an implementation process and a knowledge base viewed as legitimate by those who implement it.

An appreciation of local women's knowledge of food may help nutrition educators design culturally varied intervention programs for rural communities that are involved in food production. A substantial amount of local knowledge is necessary and must be continuously updated. Having to challenge pre-existing beliefs concerning food and health in the time of dynamic change is a big issue. Attention to women's pre-existing beliefs and resulting confusion out of multiple messages is crucial. In the women's descriptions of food was the emergence of bio-medical explanations such as vitamins and health. These issues were loosely linked. However there was consistency of opinions in terms of food items included in child meals, frequency and how much was offered. How can local knowledge gain legitimacy and impact on policy? Education for empowerment is alien to the present educational system.

How can change then be attained?

Mckie et al (1993) contends that advocacy necessitates the development of dialogue, both through discussion groups and interviews. That is, it necesitates listening by researchers/educators and an understanding of dietary beliefs and practices. Having established that, it may be possible to intervene and challenge within a local setting those practices that lead to an incomplete diet and develop access to food that would lead to a healthy diet. Nutrition education is important in promoting appropriate diets and lifestyles (ICN, 1992).

Contributions to education

Nutrition education has been criticised for it's ineffectiveness with the poor in Kenya (Waudo, 1993, Murray and Maina, 1993). Especially in the case of rural and impoverished women, specific interventions are often not designed to enhance their capabilities to meet their combined economic activities and domestic responsibility (ICN, 1992). Levison (1991) on the other hand, states that a well developed and operated program in nutrition education even in the absence of additional resources does improve the nutritional status. Nutrition education is effective where behaviour modification rather than information diffusion is the goal (ICN, 1992). It is useful through giving dietary guidelines which can be sustained because it is cost effective. Constant reminding of the use of certain foods was a felt need among the women. Attempts should be to concentrate efforts on those nutritional problems where behaviour change can lead to nutritional benefits even in a poverty context. A program that has considerable impact affecting markedly the thoughts and actions of those it touches can be considered effective (Crowley, 1986). It can only be judged ineffective if it is so designed that this impact is confined to a small fraction of the group it is intended to reach.

Behaviour analysis on the social situation and nutritional analysis as was done in the current study was useful for the data collection and analysis (Joddy, 1988). It served as tool for investigating current behaviour and defining new practices. The analysis shows where the strengths and weakness are and motivates change; for example, underemphasise on vegetables in the diet, overcooking of vegetables and the fact that food planning goes mainly into the planting stage. Planning what to plant means planning what to eat for the year. Food purchases are made as need arise or as a result of insufficient harvest or seasonal shortages. That most school children do not consume any food during the school hours was of great concern. The long distances the children have to walk from home to school means they cannot go home for lunch. They refuse to carry a packed lunch despite the concern from both parents and teachers.

Nutritional anthropology provided a socio-cultural context, where the action is. This enables one to see the real dynamism of peoples lives. It also provided diversity of co-residence in terms of the zones. Even within a radius of less than thirty kilometres, the social situations are diverse. The zone of residence, ones age and socio-economic status makes a difference to food systems. Seasonality of food production is the main constraint to optimal food intake, the knowledge the women have is adequate to function were it not for this. An anthropological stance avoids an analysis that ignores the experiences of individuals and relates lives of individuals to changes that lead to different experiences for successive generations. With change in the environment, comes change in food habits.

Audience segmentation brought out dimensions of contrasts among the women. In the locality, the researcher identified the following categories: older women, school children, younger women, with infants and toddlers, those living alone and those without husbands, those living on father-in-law's land, those with supplementary income, civil servants working in the area, squatters. The analysis shows that age is skewed upwards. This makes a difference in the kind of messages and technology one can develop for the women. Communication will change depending on the social differences of the audience. Naturally there have to be multiple technologies/heterogenous to meet the needs of all the various groups. The younger women are the ones most affected by socio-economic changes. They have children to feed as well as take to school. These women also felt removed from their age mates engaged in formal employment. The situation is explained by fact that *ni maregire /maremirwo ni guthoma/* translated as they failed to do well in school or dropped out of school, otherwise they would be better off elsewhere. As usual, it is their own fault-victim blaming. Some may be living on father in laws land which has implications for resources allocation. When planning a program, messages should meet the needs of all these categories and they are varied!

Learning what the women already know can avoid wasting resources on unnecessary education. Knowing who wants to know what can focus efforts on the most important messages for each group. As the cultural themes indicate the value of food is clear, the women can describe food and it's use, they draw links between food and health, monitor effects of food intake, recognize vulnerable groups, and use food to acquire status. In addition they have ways of solving problems, of extending their food supplies, as illustrated in the universal themes and DTM. This knowledge has implication for social marketing that promotes face to face communications and audio visual messages (Murray and Maina 1993; Joddy, 1989).

This approach can identify new problems not articulated before because the possibility of a solution has not been present. Water for instance, is a priority for women in the lower zone and could be the solution to all their problems. This changes the role of the extension agent, from a provider of answers to a facilitator, and it is a difficult transition. Why? In most programs and objectives the measure of success is based on number of individuals reached, program costs rather than the effects of these programs on nutritional status.

Averages and median or even modal behaviour would not be useful in a systems approach such as a family. They disguise the variations. Concepts and measure used in research and programs should not only reflect group attributes but also the range of social differences. In terms of dietary recalls, it is worth noting the various variations within a food that the women describe and variations in proportions of various foods within mixed dishes.

It makes sense to teach what the women would like to know rather than what someone else thinks they ought to know. One should find out the demand and then develop the technology rather than create a technology and convince people they have a problem which the idea or product just happens to solve (Butler, 1993). There were cases when women received seeds for ifps but did not plant any, of improved stoves purchased but never used or even installed.

Peer teaching: the focus on women in a group was deliberate. Reports on student-peer teaching say that students achieve significantly higher than when taught by a teacher alone (Inasi and Goldenberg, 1992), and rate peer teaching as equal to or higher than when taught by a teacher alone. A women's group is a peer group. A lot of stimuli goes into the group. There are differences in age, and levels of education. Table 7 shows the dimensions of contrasts among the women. The women then serve/should serve as a resource to each other. This brings in the social value of older women and grandmothers, as well as the educated ones. These qualities complement, and the experience can be empowering. Besides, most of the women clearly asserted that book knowledge is incomplete until grounded in experience.

Peer coaching/training provides a post-inservice staff development component for health educators to strengthen teacher use of new programs during the implementation trials (Gingiss, 1993). It prevents relapse. How can peer effective programs be developed for these women? What qualities do the women have to facilitate this?

Observational learning provides models for behaviour. A person can learn from others not only by receiving reinforcement from them as in the women's group but also by observation and utilizing their symbolic capacity (Glanz, 1990, p. 121). Traditionally observation and emulation is a major way of learning. It is a more efficient approach than operant learning for complex behaviour. It is structured to learners needs at a point in time not to time and space. This explains why people in a family often have common behaviour patterns (Bandura, 1988).

The problem with the prescriptive approach to individual change is that it emphasizes the role of the delivery system/teacher learning processes as well as adapting the learner to functional requirements: a certain time, level of education, being a mother or not. It is associated with pre-planned and centralized programs of change (Labelle, 1986). One should not always educate (Mcnutt, 1993). There is time to keep quiet and listen. Even time is necessary to find out where people have learned what they know, their concerns, and priorities. Change should not be solely in the efforts of a teacher/leader as in the intervention approach, but rather what happened in the system to explain the change process (Herzler, 1984). Focus should be on the family or community as a system.

The multiple avenues to teaching cited earlier, should start with self efficacy, building women's confidence (Murray & Maina, 1993). Self efficacy is an important construct in maintaining health behaviour (Strecher et al, 1920). Breaking the deadly grip of apathy should be the most important effect a program can have. To understand the significance of that one has to understand how real and total the sense of defeatism can be among women. When people can see and analyze their own way of being in the world of immediate daily life, including the life of the villages, and when they perceive the rationale of the factors on which daily life is based, they are enabled to go beyond narrow horizons of their village and geographical area in which it is located, to gain a global perspective on reality (Freire, 1978).

The characteristics of women as learners, if taken seriously can potentially make a large contribution to the kind of education required in this respect. These are women's thirst for knowledge, willingness to make sacrifices for access to education, and to undertake important life changes as a result (Miles (1989). These elements were observed in the women's groups. In the groups, women had a preference for and ability to initiate and participate in cooperative, interactive, non-hierarchical and personally empowering education processes, most appropriate to developing an active and flexible responses to the world. This information has implications for sustainable(Miles, 1989) practices. And women were particulary interested in human and social application of knowledge such as achieving optimal nutrition, home improvement and income generation. Every social change takes place within a given context, and to take that into account, prepares one for possible reactions of existing forces. The women's confidence increases on making something happen .

Empowerment

Women have been socialized to be passive, helpless and powerless (Rusness, 1993). These attributes are learned and can be changed through education and a consciousness that ones life and the world can change through critical reflection and consequent action (Freire, 1978). This would lead to a greater realization of personal power, a power to achieve results as mediators of nutrition. Any program that deals with women and food must deal with the root of poverty and powerlessness that follows. Hunger and malnutrition are the most basic manifestations of poverty in a society (Levison, 1991). Powerlessness is linked to disease (Nina & Bernstein, 1988) and empowerment linked to health. The focus of the current study was on empowerment as a social action.

Education should have as one of it's tasks to invite people to believe in themselves, to believe that they have the knowledge (Freire, 1973). By learning the women can then teach their peers and their own children. Freire (1973) advocates dialogue in which everyone participates as equals and co-learners to create social knowledge. Outsiders should provide resources and experiences but not take control. The group connection will contribute to emotional growth and result in increased control over their lives.

The approach should move from looking at resources at hand to deficiency and not vice versa. Empowerment in this case is the enhancing of the women's capacity to control their own lives by defining and acting upon their own health and nutrition to their own satisfaction (Joddy, 1988, p. 133). The use of empowerment in this case is as an organization policy, to develop nutrition programs which strengthen both the individual and the community by encouraging local initiatives. Examples of local initiatives are planting of ifpps, bringing foodstuffs from another district and exchanging their produce for it. Growth monitoring, identifying mild deficiencies, and defining entitlements to be met, were part of the traditional model as illustrated by the themes; these should be identified and promoted. This way the women can get an opportunity to be self reliant with regard to optimal nutrition by preventing all incidental malnutrition and by creating an environment in which households can be expected to meet their own nutritional needs on a sustainable basis.

Promoting individual autonomy will stimulate responsibility for health and well being, even when it means cooking 'two pots. The present system of 'I know, I will tell you and , you will know' is a top-down approach and must go. To meet a felt need among the women, that of being reminded constantly, a food guide based on local resources should be developed. A food guide is a useful tool, for instance, that translates nutrient intake into recommended food intake (Welsh, and Davis, 1993). The guide provides a framework for selecting the kinds and amounts of food of various types to provide optimal diets, promote optimal health and focus on total diet (Welsh et al, 1993). Themes in chapter three of the study, show that women's reasoning is influenced by tradition and situated in local knowledge. Concepts influence behaviour.

Certain concepts are weak, though salient: specific quantities or sizes of portions, proportion of various foods in mixed dish, length of time vegetables are cooked or how many times they are reheated before the final consumption. These salient or 'other' foods incidentally are the sources of micro nutrients. This salience is due to change in cooking habits and having to operate in the two domains of measures cited in the cultural themes. Micro- nutrients should be emphasized by promoting consumption of 'other' foods. FAO, (1992) confirms that dietary modification to increase consumption of micro nutrient rich foods is considered the safest, sustainable and long term measure to control micro nutrient deficiency. These foods as explained by DTM and the componential analysis are most likely to be omitted from the diet, to be considered optional.

Education should address the issue of overcooking vegetables. Traditionally vegetables were mashed into food. To achieve the desired characteristics of the vegetables soda was added to soften the vegetables. The tendency to overcook vegetables is based on that culturally acceptable texture of cooked vegetables. The women can learn to appreciate the *gau gau*/ crisp texture of vegetables, if a program addresses the loss of nutrients as a result of overcooking of leafy vegetables. This mostly results from the use of vegetables in mixed food dishes in which some foods take longer to cook than others. Besides being overcooked, vegetables may also be reheated several times. In such instances, the vegetables are cooked in bulk and later reheated or modified to save time and fuel. Once the women appreciate the crisp texture of vegetables, they do not need to cook them in advance. Water soluble vitamins B and C are highest when vegetables are consumed fresh and raw. This eliminates cooking, saves time and can be easily acceptable with children.

The women should not be asked to unlearn the traditional grouping systems unless there is clear advantage for doing so. As the women value complementarity of foods by mixing foods together, emphasis should be laid on maximising that. That is on the proportion of beans to maize for adequacy. Cereal based diets have iron inhibitors in foods, therefore women must be encouraged to consume Vitamin C rich foods, especially the vegetables they have access to. The potato when used as frequently as the women already do and in large amounts is a good source of vitamin

C. Vitamin C also increases the absorption of iron. Iron is crucial for these women who are involved in manual labour, as haemoglobin affects potential for productivity (Levin, 1991). Small amounts of meat can enhance the absorption of iron in the diet and eggs are a good source. The fact that fat or oil is necessary for absorption of beta carotene into the body is of importance to a population that relies mainly on vegetable products as a source for vitamin A. The women could use cream from milk, which is readily available to this end, without having to purchase fat. Cream is a good source of vitamin A on its own.

The food guides used should also be based on nutrient content of the food most commonly used in a region and the way food is used. In this case, that use is as mixed foods, as one pot dishes, as well as the way that food has been grouped in the past. The taxonomy indicates items such as beans and some legumes are getting to be 'other' foods. DTM reinforces the fact that they are optional in most dishes too especially in certain seasons. The amounts used in mixed food dishes vary. A new approach should avoid using nutrient content of infrequently used groups such as meat, fish, black currants, bread. The approach should be based on regionally available foods like milk, eggs, legumes, vegetables. The use of honey and noe/ broad beans, both available, should be explored. The foods, used influence the nutrient profile assigned a food group. Foods not readily available should be used for reference or as alternatives, but emphasis should be on increasing use of locally available foods. To do otherwise will exclude a large number of families. There were adequate foods locally that allowed flexibility and variety in the past.

The categories, elicited from the women clearly showed the various variations within a food like mukimo, githeri, sources of fat and porridge. To start with, local forms are to be a priority, then other forms can be identified and added gradually. Further, clarification of individual entitlements based on number of servings from various mixed food dishes in order to meet nutrient requirements is crucial. Food groups should be defined according to their utility and the way they are used based on the various attributes in table 3. Most foods were fully utilized into multiple products. The women consider the various attributes and the end product expected determines how certain foods are used. For example, the white and red skinned potatoes are used in different ways, for stews and mashing respectively.

Food guides should not be an organization of nutrient sources, it must account for the food habits and classification systems of the target group. Clearly in this case, the concept of a two course or three course meal is not appropriate. The DTM shows factors considered in meal planning are time available, who the food is for and the occasion or food event. This coupled with foods available determines what is eaten. The women work from foodstuffs available (see DTM) to recipe to product and not from recipe to foodstuffs to product as is the conventional practice. That way the women end up with some food or other regardless of what foodstuffs they have at hand. The women also note suitable accompaniments to various food. The physiological effect of a certain food is very important.

Selection of recipes in nutrition programs should be suited to the equipment of the target group and limited to top of stove/fire cooking (Hertzler, 1984). Types of fuel used are crucial too. Care should be taken not to impose a change that has a completely different view of reality than that which exists within a culture. IFPP (1992) for instance in a promotion of ifps, served a dessert and a fruit juice from certain indigenous fruits. This draws us to recipes used for promoting utilization of the foods as well as the equipment available in various homes (Hertzler, 1984)

Recipes should be relevant to contemporary living and specific seasons. It is crucial to distinguish between nutrition programs that empower people and those that weaken them by excluding a large number of the women the program was designed for. Yoke (1993) talks of disempowerment. In such cases greater value is laid on outsiders' ways of achieving ends, which disempowers those who value, and practice cultural knowledge. In another instance one participant claimed a certain program promoted vegetables the women had no intention of ever eating. No true Kikuyu eats such vegetables she asserted. The idea should be to create awareness and offer alternatives, but not take control or prescribe lifestyles.

Food safety as illustrated by cultural themes was incorporated within the traditional food system. It should still form an integral part of nutrition education.

Uhoti/Mahinya/ Empowerment should aim at a variety of locally developed solutions to local problems, rather than a single solution developed by experts from outside. As the study has illustrated, nutrition problems have many different definition as well as different remedies. The women have adapted some remedies to their needs, as for example cooking of ' two pots', ifps and use of the potato, which they have in abundance, to transform every other foodstuff.

Educators, planners and facilitators should reflect on plans, decisions and programs they advocate, as they cook, shop or eat. It is a good way to assess how much of what goes into programs is useful, works or is sustainable (Mcnutt, 1993), or whether it is the best investment of human and non-human resources. Experience shows that most behaviour learnt in institutional settings is not functional outside of them (Murray, 1993). In most cases it has to be modified.

The present approach to nutritional planning serves to facilitate centralized decision making at national or local levels. Whose interests does it serve? As local professionals we must avoid the approach that views our grandmothers, mothers and sisters and people in general as objects of professional decisions, decisions we know will have little or no effects on their lives. These programs are geared towards incentives and motivation to value health. They are based on assumptions that nutrition problems can be solved by technology, the text book approach and that the women are unable to analyze their own problems. Women and local communities generally are aware of their problems and of the conditions necessary to improve their wellbeing (ICN, 1992). But these incentives must change to be effective. Incentives can change only when both power and knowledge change (Gran 1986, p. 275).

Looking at the Kenyan national food system, the link between knowledge generation and power is obvious. This power differential determines how knowledge is perceived and whose knowledge matters when it comes to policy. Development becomes something done to households, not something they do themselves. Telling women that a garden can only be useful if next to the house has no value (IFPP, 1992). Will the future just happen to the women? The women should be let to decide where to put her garden at least!. Control and the locus of power must gradually shift to the women. *Kinya kiri itina nikio kiigaga/* translates as, it is the pot that has a firm bottom that stands on its own. Local knowledge and strategies of the women are not recognized because presumably, the subaltern or the oppressed do not act since they are victims of greater power, that is, the oppressors ideology (Yoke, 1993). The view of rural women as 'conditioned to sit still, who come when they are called, who do what they are told, and who work hard at suggestions' should go. The role of extension agents will have to change from one who has all the answers to a facilitator. In a centralized program, power is wielded by an external authority over individuals and a community. These approaches lack the capacity to grow but do not want to recognise it. They can not evolve!

In the recent past, when such programs have been withdrawn, due to SAPS, cost sharing, lack of money for extension services (rapid changes) and political good will, the dependent individuals are at a loss. The idea should be to spread resources and encourage responsible behaviour. The DTM shows that the women focus on present problems but focus on the future too. The future should not just happen to the women, they should create it by decisions they make themselves. No doubt power is of overriding concern to human beings. In fact it may just be man's central concern (Ryan, 1971). What a person is able to make happen by one's own will and one's own actions, determines the quality of one's life. Indeed one's existence. ***Gutiri wao ukauma na njira/*** literally translates that essentially, the responsibility over their nutritional status is their own. So will be the consequence of poor planning, their own or otherwise. It is in fact the women, who will make any strategy work.

The notion of empowerment must go into design and behaviour implementation not just in rhetoric (Berg, 1993), which is popularly termed as an 'add empowerment, stir and serve' approach. Empowerment of women will lead to greater participation in the development process and improved nutrition (ICN, 1992). An important component will be to decide what the women can and will end up doing and what central health services can do if and when they have the resources. Among these activities growth monitoring, deworming and school feeding programs should take priority.

Once empowerment begins, the term intervention should be re-conceptualized to reflect the new reality, women as actors, not recipients, a two way communication and problem solving process. The term as it stands implies outsiders coming in to help, without whose help, nothing happens, will ever happen. Women must change from being viewed as users of technology, in this case knowledge, ideas and professional decisions to producers of technology and monitors of it's impacts. Sustainability of this process involves ability to cope with needs that emerge with new learning that leads to new needs and interests in a continuous process. It evolves!

Conclusion

The main objective of this study was to determine/explore nature of women's knowledge and decisions about food from an emic/native point of view. The methods used to conduct the data were adequate and relevant to the study. In particular, the researcher had a great advantage in that she was studying a culture with which she was familiar. Being a woman too, meant she already held some of the knowledge herself. Had she been an outsider, a different approach such as focus groups would have been taken. The study would also have taken more time to complete. The data is credible because it was verified by analysis of available documents and through informal discussions with members of the community.

In the study, substantive knowledge is defined by the ways in which the women of Nyandarwa categorize, process and impute meaning to food and their experiences with it. There was a traditional culture of food with its system of relevances, and now there is a western system of relevance. Each of the institutions has a body of knowledge. The knowledge about food that the women have has grown up in the context of the culture of agriculture, medicine, education and the family. These components are used to provide relationships about the kinds of food, reasons for consumption, means of getting the food, and even the characteristics of the food. As a result, the women's constructs of food and its relationship to health do not differ from the western system of relevance. The two systems are complementary.

This knowledge evolves out of a complex process involving social, situational and institutional factors as illustrated.

Knowledge about knowledge/adaptive knowledge, looks at how the women act, the foods they use, and the knowledge they use to select those foods. The social situation and residential area of the women determines how this knowledge is applied to a given situation. There are emerging themes about time: the western division of three meals a day has not fit with the every day life of the women.

Making decisions about food to prepare for the family is a complex process. Food for different categories of people is integrated into every day knowledge of the women. The second stage presents different sets of foods depending on the situation of the women. The pre-attentive stage is habituated over time and there is no need to keep in mind all the details. The choices are narrowed. This is a form of social knowledge and knowledge of a situation and its limits. The actions can be performed in future with an economy of effort. It makes it unnecessary for each action to be defined anew. These habits/shared practices are shared within the culture, they are institutionalized. This typifies individual actions of the women in various households, as well as the actors/women involved in taking the decisions. These institutions are experienced are existing over and above the women who happen to embody them at the moment. The institutions such as nutritional messages/food habits are experienced as realities on their own; such as the economic situation and formal education. According to FAO (1992) many cultural aspects of diet are a result of need, opportunity and convenience; this has been confirmed by the Decision Tree Models developed by this study. The decision criteria can then be used to determine change points/plan programs..

Actions and words of the women form the knowledge chains by which knowledge is exchanged or generated. It is only the social objective/social formation that is passed on. The women experiment with the food. Participant observation is a major way of learning. Interaction of women of different generations with social stimuli play a major role in establishing that knowledge and diffusion of that knowledge. Even with multiple stimuli, past practices can be re-interpreted without necessarily upsetting the institutional order. Therefore a crucial role of disseminating that knowledge is still played by the women. The women do not transmit this particular knowledge(knowledge about food) because they know it; they are defined as knowers because they are women. Children inwardly appropriate the mothers reiterated roles and make them the models of their own role playing.

The study also explored social and political means of applying the knowledge generated to reflect on changes needed in nutrition education programs. Incorporating these findings into nutrition programs is a means of legitimizing the women's indigenous knowledge and acknowledging the women as custodians of valuable knowledge. In future, most nutrition programs should focus on changing lifestyles/changing dietary pattern as well as on sustainable regional diets.

Finally, reciprocal determinism, a component of the Social Learning theory is explored. This asserts that most behaviour change requires changes in ones social and physical environment, expected outcomes and ones skills/behaviour capabilities/self efficacy, to make the behaviour both sustainable and meaningful as it was in the traditional setting.

Micro nutrients are assuming a new importance as their role in health and development become better understood. Incidentally from the women's responses these micro nutrients are derived from 'other ' foods, those that are most likely to be optional in the meals. FAO (1992) notes that adequacy in micro nutrients can be achieved by dietary diversification, expanded nutrition and home production. These three components have been addressed by this study.

Finally, empowerment of the women should comprise an organizational policy/foundation of any program. This will enable the women to function effectively as mediators of family nutrition and health. Their contribution/knowledge of food, especially that of decision making and problem solving should be reflected in food policies and consequently in nutrition programs.

Appendix

Figure 1: Words and processes that describe food

Figure 2: Foods and actions that define status

Figure 1: *Words and processes that describe/define foods:*

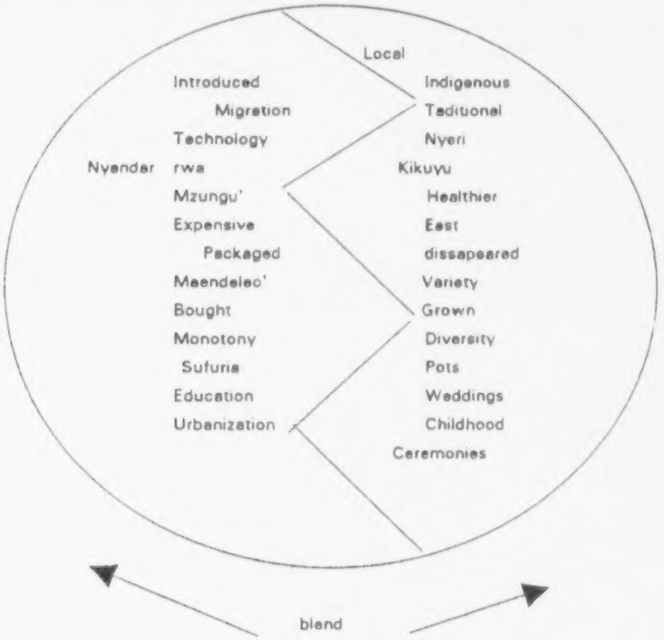

Local
Introduced
Indigenous
Migration
Teditional
Technology
Nyeri
Nyandar
rwa
Kikuyu
Mzungu'
Healthier
Expensive
East
Packaged
dissapeared
Maendeleo'
Variety
Bought
Grown
Monotony
Diversity
Sufuria
Pots
Education
Weddings
Urbanization
Childhood
Ceremonies
blend

Figure 2: *Foods and actions that define status:*

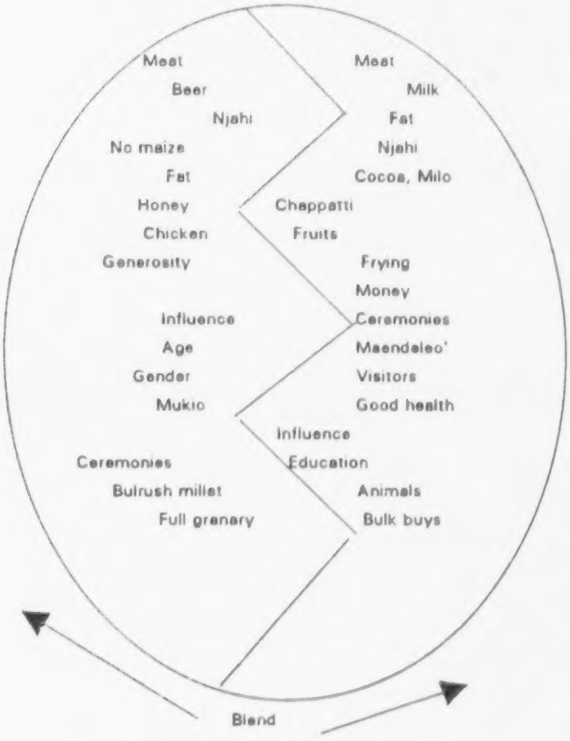

Meat
Meat
Beer
Milk
Njahi
Fat
No maize
Njahi
Fat
Cocoa, Milo
Honey
Chappatti
Chicken
Fruits
Generosity
Frying
Money
Influence
Ceremonies
Age
Maendeleo'
Gender
Visitors
Mukio
Good health
Influence
Ceremonies
Education
Bulrush millet
Animals
Full granary
Bulk buys
Blend

Figure 5 :Value of the potato

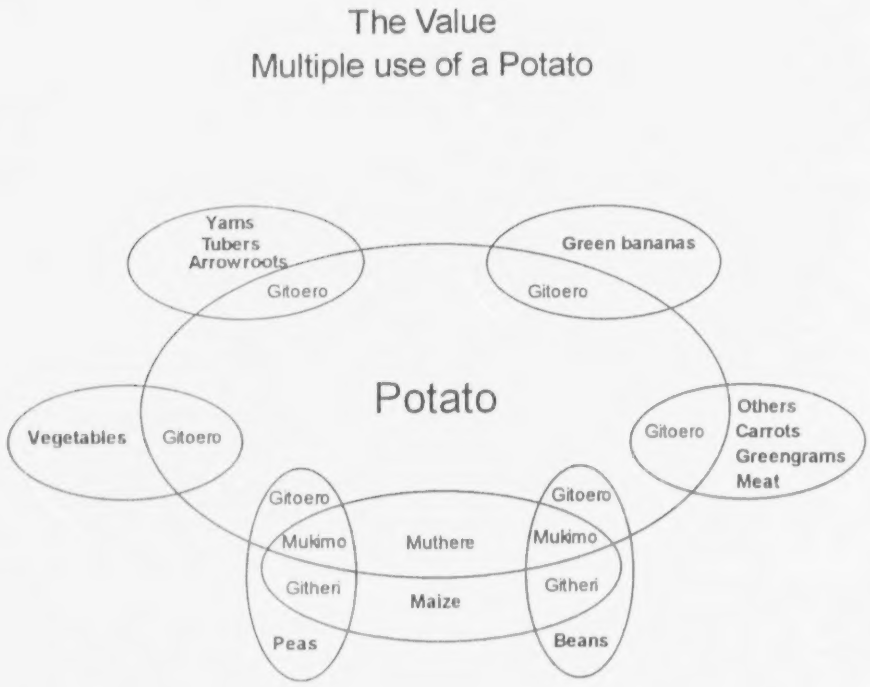

The Value
Multiple use of a Potato
Yams
Tubers
Arrowroots
Gitoero
Green bananas
Gitoero
Potato
Vegetables
Gitoero
Gitoero
Others
Carrots
Greengrams
Meat
Gitoero
Gitoero
Mukimo
Muthere
Mukimo
Githeri
Maize
Githeri
Peas
Beans

Table 4:Characteristics of some of the women: Dimensions of contrast

Woman	Zone & x or y	Age grp	Marital status, children away?	District of origin	Formal education	sources of income	Unique/ other attribute	Indicators of technology innovation
A	x: over 40 years	65+	married lives with husband	Nyeri	none	dairy cows children	-40 acres land	-
B	x: came as child	60+	widow great grandmother, all children away , looks after grandchildren	Nyeri	none	dairy cows children	Travels out often,	-
C	x: since 1981	28	Married lives with husband, has two children below five	Nyeri	seven years	sells labor	secretary of women's group, live on family land	-
D	x: for 20 years	58+	Married lives with children and grandchildren	Kiambu	none	had cows, were stolen	retired husband	Has semi permanent home: large homestead
E	x: since 1966	56	married with children, kids in school, one under five	Nyeri	eight years	Butchery, sell milk		new semi-permanent home, water tank
F	x: since 1958	58	married, no young children, most in sec school	Nyeri	none	buying/selling grains	Chairlady of group, 3 university children	Improved stove
G	y: since 1965	born 1929	married, husband retired civil servant; no kids at home	Nyeri	4 years	pyrethrum, milk, carrying loads, milling and threshing grain	Ass. chair-lady, diabetic husband, well traveled	Tractor, grain miller, thresher, water tanks, water purifier, permanent house, telephone
H	y: since 1965	45	married, ten children, grandchildren, most in school	Nyeri	none	pyrethrum, milk, transporting goods	tried adult, literacy classes, can read bible	lorries, water tank, permanent house
I	y: since 1965	32	second wife, 4 children all school age	Nyeri	nine years, village poly-technic	Market woman, milk	trades, sews garments	Permanet house, water tank.

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